# PURCHASING

October, 1945

L. E. STONEHOUSE:

READY FOR THE GREEN

LIGHT!

See page 83

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Use the time-tested products and engineering service that assure 4-R Lubrication

Right Lubricant Right amount Right place Right time

N production for peace, as in production for war, you are still under pressure to get out the most goods at the least cost.

Texaco 4-R Lubrication-made possible by Texaco products and engineering service-can help you, just as it has helped in countless plants all over the country.

When you use Texaco you enjoy three major benefits:

- 1. Lubricants developed for your specific industry and proven in service.
- 2. Lubrication engineering service to see that you use the right amount of the right lubricant in the right place at the right time.
- 3. You deal with a company hav-

ing nation-wide facilities to assure prompt delivery and service wherever you are located.

Because they have proved so effective in increasing output and lower ing costs, Texaco products are definitely preferred in many fields. Why not let the favorable experience of thousands of users guide you in your selection of lubricants?

Texaco Products and Texaco Lubrication Engineering Service are available through more than 2300 Texaco distributing plants in the 48 States. Get in touch with the nearest one, or write:

Street, New York 17, N. Y.

The Texas Company, 135 East 42nd

#### RECONVERSION RUSTPROOFING

4 Points to Remember

- Ordnance Specification P.S. 300-4 contains official instructions for the complete processing of Government-owned production equipment.
- These instructions require that blows only rustproofing materials meeting Government specifications be used.
- Texaco rustproofing products ating meet Ordnance specifications for application on Government-owned equipment.
- For full information, see your all th Texaco representative or write Enclo to us.



**EXACO** Lubricants, Fuels and Engineering Service

TEXACO STAR THEATRE WITH JAMES MELTON EVERY SUNDAY NIGHT-CB

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CHASING

OCTOBER, 1945



Require the Protection of CENTURY TOTALLY ENCLOSED FAN COOLED MOTORS!

The illustrations of Century TEFC Motors in use shown here are typical examples of machines on which these motors can maintain production despite adverse FING atmospheric conditions. Where the air is charged with substantial quantities of metallic or abrasive dusts, coolant mists, or oil-laden factory dusts, Century TEFC P.S. Motors give the protection that means constant uninnstruc- errupted production.

The vital parts of the motor are isolated from the outside atmosphere by a sealed inner frame. A large fan e that blows a blast of cooling air around the frame and the

s meet bearings — to keep the motor temperature well within safe operoducts ating limits.

For maximum protection that will keep your machines on the job, get e your all the facts about Century Totally er write Enclosed Fan Cooled Motors. Call in a Century engineer; he may be of assistance.



ing machine. Dirt on outside of fanguard is result of operation where air contains metallic dust and coolant spray.



Century TEFC Motor mounted high on top of a boring machine. It's out of reach and probably gets little attention, yet protected against coolant mists and oil-laden dusts by Century TEFC design.



Century Totally Enclosed Fan Cooled Motor with the heavy, pressed steel



Century Totally Enclosed Fan Cooled Motor End Bracket.



Century Totally Enclosed Fan Cooled Motor Frame and field winding showing the air passages.



1806 Pine St.

St. Louis 3, Mo.

Offices and Stock Points in Principal Cities

434



CHASING, published monthly by Conover-Mast Company. Publication Office, Orange, Conn. Editorial and Executive Offices, 206 East 42nd St., New York 17, N. Y. Entered as second-class mattr August 3, 1942, at the Post Office in Orange, Conn., under the act of March 3, 1879.

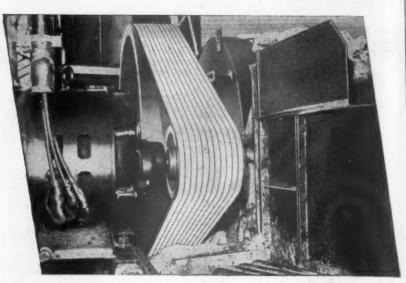
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Your Standard
GATES VULCO ROPES



## are giving <u>BETTER</u> <u>SERVICE</u> than ANY V-Belts <u>EVER</u> Built Before the War!

To meet the unprecedented severity of combat service on U. S. Army tanks, tractors and self-propelled big guns, Gates developed and built V-Belts far superior to any that were ever built before--and here is why this fact is important to YOU:—

and NOTE THIS:-

Gates also makes these special belts to meet exceptional service needs.

Rayon Cord **V-Belts** Static-Safety V-Belts Special Synthetic **V-Belts** All Gates Cotton Cord V-Belts are **Built With** V-Belts Patented Steel Cable CONCAY **V-Belts** SIDE

V-BELTS has been added, day by day, to the quality of the standard Gates Vulco Ropes which have been delivered to you.

You have not had to wait until after the war for these improvements for the simple reason that more efficient V-Belts have been an important factor in increasing essential war production. That is why your standard Gates Vulco Ropes are today the best V-Belts that have ever been delivered to you.

In addition, where V-Belts of special construction are required, your Gates Rubber Engineer is in position to supply a Gates Vulco Rope that is especially engineered to meet your special needs. You need only pick up your phone book and look under the heading "Gates Rubber." The Gates Rubber Engineer will bring to you, right in your own plant, the very latest advances in V-Belt construction and in drive operation as well.



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#### This Stamp Is Your Guarantee of Quality!

One of the important reasons for the high uniform quality of Inland Sheets is a carefully planned sequence of rigid inspections. Only those sheets which successfully pass an extremely critical final inspection are marked with the Inland stamp—a visual proof that your specifications have been fully met.

When you see the Inland inspectors'

stamp on the special quality sheets delivered to your receiving department you know that every possible care has been used to produce a steel to meet your individual requirements. This applies, not only to the selection of raw materials, but also to the careful processing of the steel, and its ultimate rigid inspection.

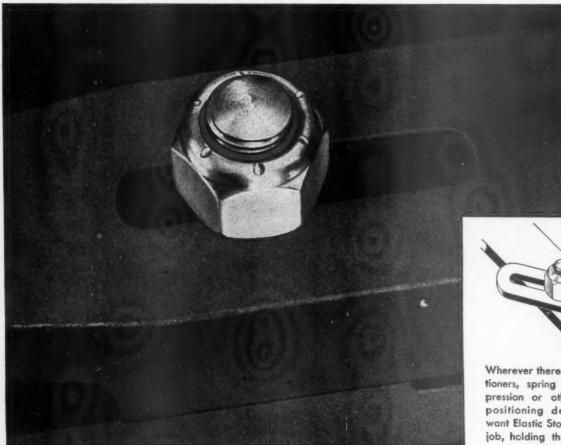
Principal Products: Sheets · Strip · Tin Plate · Bars · Plate · Floor Plate · Structurals · Piling · Rails · Track Accessories · Reinforcing Bars

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# THIS NUT PROMP ITS place



#### It Stays Where It's Put

You'll always find the Elastic Self-Locking Stop Nut where you place it, because this nut always stays put. The Elastic Stop Nut holds an adjustment with a sure grip whether seated against a surface as in the slot positioner illustrated above or unseated on a threaded part.

The Elastic Stop Nut uses its head —because built into it is a red collar. This is an elastic compression collar that molds itself to the individual threads of the bolt, locking tight.

You need no jam nuts, cotter pins or other locking auxiliaries when you use Elastic Self-Locking Stop Nuts. They refuse to loosen, creep or "back off" under the toughest, most critical operating conditions. Yet they never rust or freeze in place and can be easily removed when necessary.

Proved in billions of wartime applications, Elastic Self-Locking Stop Nuts give definite insurance against loose nuts and consequent delays, breakdowns and extra maintenance work. From delicate, precise aircraft installations to heavyduty tank installations, these nuts with the red elastic collar have shown their gripping power. Elastic Self-Locking Stop Nuts are the sure way to greater safety, economy and reliability.

Wherever there are slot positioners, spring tension, compression or other types of positioning devices, you'll want Elastic Stop Nuts on the job, holding their exact adjustment. Elastic Stop Nuts, because they successfully resist the effects of vibration, shock, impact and other loosening influences, are ideal for pos-

LOOK FOR THE RED COLLAR
THE SYMBOL OF SECURITY

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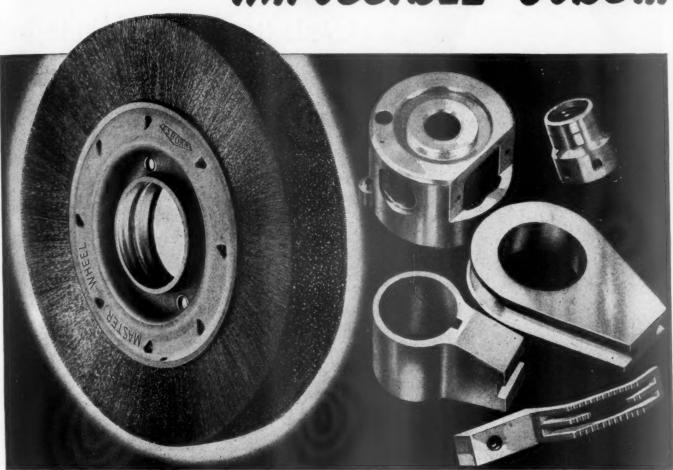
#### ELASTIC STOP NUT CORPORATION OF AMERICA

Plants at: Union, New Jersey and Lincoln, Nebraska

Sales Office: 1060 Broad Street, Newark 2, New Jersey

## The Brush that does the

"IMPOSSIBLE" JOBS ...



Despite the great advances in brushing techniques—many of them war-born—there have been surfaces which, in the immediate past, had to be hand-burred.

Now-for the first time-here's the power brush that can do the job. It's Osborn's new Master Wheel with .005 wire.

Aluminum, brass or steel—it makes no difference to this versatile brushing tool. It does the work uniformly, perfectly, at a fraction of the cost!

Regardless of what you make or plan to make no matter what the material—there are almost sure to be many parts that can be finished best by power brushing. And when they are, you'll have a betterperforming, better-looking, more saleable product —produced at a lower unit cost.

It will pay you to have an Osborn technician visit your plant to study your operation. No obligation. Just write, wire or phone us.

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WORLD'S LARGEST MANUFACTURER OF BRUSHES FOR INDUSTRY

## Announcing:

Exhaustively tested in the field, enthusiastic reports from users prove that tool room wheels with the new Macklin uniform V5 and V6 bonds give outstanding—almost sensational performance.

Complete details, specifications and recommendations for all types of tools and dies are given in illustrated booklet T-45. Write for your copy today.

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J&L PERMASET

PRECISIONBILT PRE-FORMED WIRE ROPE



## PRECISION AND PRE-FORMING

MEAN PERFORMANCE FOR YOU

Like a sextant, J&L wire rope is a fine machine. It is made with precision and pre-formed for greater efficiency and longer resistance to wear and fatigue. Made from J&L Controlled Quality Steel . . . by men of skill and experience . . . J&L Permaset Precisionbilt Pre-Formed Wire Rope affords greater safety . . . helps keep operations at peak . . . protects your investment in equipment.

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PITTSBURGH 30, AND MUNCY, PENNSYLVANIA

IRI DEDMASET

PRECISIONBILT PRE-FORMED WIRE ROPI

## "Know-How" Information

☐ 1. PLIOBOND — You should try out this sample of Pliobond which is yours for the asking. It bonds anything to anything,—metals, plastics, fabrics, glass, rubber, wood, leather, ceramics and even plaster or concrete. The United States Plywood Corporation says that it's strong and permanent; that it resists water, oils and wax, and works hot or cold. It can be brushed, sprayed, spread or roller coated. It's an all purpose plastic adhesive. Check the coupon and send it to us for a sample.

☐ 2. UCILON—New coating material. It's compounded from special synthetic resins, and can be brushed, sprayed or dipped like ordinary paint. United Chronium Inc. states that it is more resistant to more corrosive elements than other coating materials. It is available in white, clear, black or colors, and produces an attractive glossy finish on metals, wood, or concrete. Get copy of booklet describing Ucilon. It tells how to save time, labor and materials in protecting surfaces.

□ 3. PORCELAIN ENAMEL.—Colorful new booklet describing many of the characteristics and applications of porcelain enamel is available from the Porcelain Enamel Institute. It includes a pictorial description of how porcelain enamel is made and applied to metal parts. Advice as to proper design and procedure in obtaining best results and description of products which porcelain enamel gives longer life, are also contained in the book.

☐ 4. PRESSURE CASTINGS — Meehanite Research Institute has published a bulletin on the subject of "Pressure Castings." It describes a variety of pressure applications and illustrates faulty and correct design for pressure units.

□ 5. SURFACE & FACE GRINDING—Circular issued by A. P. de Sanno & Son, Inctells about the Por-Os-Way grinding segments which are said to cut surface and face grinding costs 2 to 5 times. The segments are said to remove more metal with fewer passes at higher speed, and to make for less grinding cost per piece. Check No. 5, and we will see that copy of circular is sent to you promptly.

☐ 6. LAMINATED PLASTICS—You may have good use for the new 54-page, colorful catalog and hand book on laminated plastics issued by the Taylor Fibre Co. It gives information on Taylor Phenol Fibre, Vulcanized Fibre, and new Phenolastic Fibre, as well as Taylor Insulation, Taylor Silent Gear material, special laminates, moldings and assemblies.

☐ 7. TWIST DRILLS—New 40-Page extensively illustrated booklet conains comprehensive information about "Shankless" roll-forged drills. If your company uses twist drills you of course will want to see what the Republic Drill & Tooî Company has to say about its "shankless" drills.

■ 8. METAL SPINNING—You should have a copy of Spincraft's new Data Book No. 2. It illustrates spinning aluminum, magnesium, stainless steel, tubing, steel, copper, brass. The illustrations are of more than passing interest, and the book will acquaint you with the latest developments in spinning. It shows intricate jobs heretofore considered impossible to form by the metal spinning process. Milwaukee Metal Spinning Co.

9. REFRIGERATION PRODUCTS—New Weatherhead catalog J-104-F, describes many new and improved refrigeration

products. It is divided into six sections describing valves, dehydrators, strainers, manifold assemblies, accessories and fittings, and gives complete technical information, part numbers, etc. Catalog is illustrated in two colors, showing in cross-section and exploded views all of the various parts furnished by the company.

□ 10. STAINLESS STEEL SHEETS — Complete 96-page handbook available from Eastern Stainless Steel Corp., tells about the practical values of stainless steel in various uses and the company's stainless steel sheets. Four-page "turn-out" spread gives complete details of their properties. The book contains complete data on gages, sizes and tolerances, finishes, and other information that P. A.'s should have.

Adding another important volume to its "Library of Stainless Steel Information", the Rustless Iron & Steel Corp. has just released an 84-page reference booklet on the subject "Machining of Stainless Steels." It gives up-to-the-minute information on the fabrication and application of various grades of stainless steels, prepared from actual production experience and laboratory research. You should have a copy of this thumb-indexed and wire-bound book for use by buyers as well as heads of various plant departments.

☐ 12. FOUNTAINS AND SHOWERS—New Bradley catalog No. 4308 describes washfountains, drinking fountains, and multistall showers. Wash-fountains are composed basically of 85% stone or marble and 15% binder and come in varied color effects. Bradley Washfountain Co.

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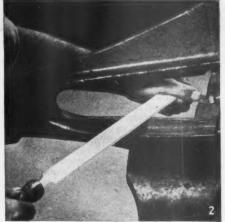
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☐ 13. COLOR DYNAMICS—Industrial use of color is now a top subject. You may find 24-page full color illustrated booklet "Color Dynamics in Industry" available from the Pittsburgh Plate Glass Company of practical value for it describes the three basic objectives of scientific color use, namely—To promote continuity of employment; To improve efficiency; To maintain quality of production. It tells how color reduces absenteeism and injuries. Suggestions are given on methods of painting machinery to reduce personal injury, eye strain, fatigue, etc.

14. LIGHTNING ARRESTERS—Bulletins GEA 2975 and GEA 4437 describe new pellet arrester with nitrogen-filled gap chamber, for the protection of distribution circuits 15,000 volts and below. The development marks the first use of inert gas in arrester gaps. They have separately sealed, nitrogen-filled gap chamber which prevents the formation of ozone or oxides and keeps the gap electrodes bright as (Continued on page 12)

FOUR PAGES OF "KNOW HOW"-10-12-14-16

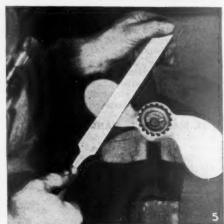






# IS "THE RIGHT FILE FOR THE JOB"?





Specialization—in tools as well as in occupations—rules industrial practices today. For the countless operations involving filing, Nicholson has gone far to aid metal-products manufacturers—with specialized files definitely proved to turn out work faster, more efficiently and more economically.

#### How well do your key shop men know modern files?\*

On this page, for example, are five fairly common yet distinctive filing operations . . . and five equally distinctive types of files to fit those operations properly. An interesting survey would be to see how many of your production heads and master mechanics can name or associate the right file for each of the operations:

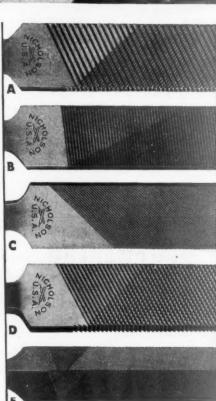
1. Precision finishing a small cam wheel. 2. "Snagging" a foundry casting. 3. Finishing a brass valve part. 4. Lathe filing. 5. Dressing an aluminum propeller blade. The answers are:

File. Nicholson X.F. Swiss Pattern Slitting File. 2-D. Nicholson Foundry File (with extra-sturdy teeth). 3-E. Nicholson Brass File (note fine long-angle overcut to break up filings and help file clear itself). 4-C. Nicholson Long Angle Lathe File (provides clean-shearing, self-clearing, non-chatter action). 5-A. Nicholson Type A Aluminum File with deep "open-throat" upcut and fine overcut.

"The right file for the job" is a longstanding Nicholson tradition, achieved through relentless study of industrial filing problems and production methods.

\*Free Book, "FILE FILOSOPHY"

NICHOLSON FILE CO. • 28 ACORN STREET, PROVIDENCE 1, RHODE ISLAND
(In Canada, Port Hope, Ont.)



NICHOLSON FILES FOR EVERY PURPOSE



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## Know-How" Information, Continued

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new during years of service operation and gives more stable gap-sparkover characteristics.

☐ 15. INDUSTRIAL INSULATIONS — New 28-page industrial catalog describes in detail the various high and low temperature mineral wool insulations made by Baldwin-Hill Company. The book is fully illustrated and compete with application specifications, conductivity curves and engineering data.

□ 16. PERMANENT MOLD CASTINGS — New data bulletin PMC 45, 20 pages, issued by The Permold Co. tells about aluminum castings and explains their advantages with respect to such factors as cost, design and strength. Various applications of permanent-mold-castings are illustrated by clear-cut photographs of many varied parts. Tables give data on composition and physical properties of Permold aluminum base alloys and the nominal compasition and physical properties of Permold aluminum base sand cast alloys,

☐ 17. MATERIALS HANDLING—"Materials Handling Analysis Guide," pocket size booklet of 36 pages issued by the Towmotor Corp. is divided into 3 major sections—(1) How to Tell if You Need Better Handling Methods, (2) Analyzing the Problem, and (3) Determining the Solution. There are 31 illustrations which point out ways of improved handling methods. The guide is impartial, informative and helpful. It covers a subject you are much interested in. Get a copy.

☐ 18. MARINE PRODUCTS—The Flintkote
Co. has for your reference file number of
data sheets on various Flintkote Marine
Products—anti-slip coating, non-slip woven
matting, matting for underlayment, deck
coatings, insulation coatings, and so on.
File is yours for the asking.

☐ 19. PIPE JOINTS — Globack joints for high temperature and high pressure piping are illustrated and described in new bulletin released by Midwest Piping & Supply, Inc. The joints are said to provide a higher factor of safety. The metal is distributed where it does the most good.

☐.20. JACKS — Buyers of parts for lever and hydraulic jacks will find practical help in new 48-page Repair and Maintenance Repair parts for the various types and sizes Catalog issued by Templeton, Kenly & Co. Repair parts for the various types and sizes of Simplex Jacks are illustrated and listed. Complete list of interchangeable parts for Simplex jacks is included. The book facilitates the ordering of replacement parts, and also gives valuable suggestions for the repair, maintenance and lubrication of jacks.

□ 21. CALGON for Textiles—New booklet fully describes the uses of Calgon in the textile industry, in washing, scouring, bleaching and dyeing, as well as specific applications of the chemical in wool, silk, cotton, rayon and hosiery processing. Calcon is a dehydrated phosphate glass made from food-grade phosphoric acid, and the booklet says it can be safely used in all wet processes. It is harmless to the human skin and hair and equally harmless to all textile fibers. It is available in two forms—where no alkalinity is desired, and where a slight alkalinity is needed.

☐ 22. MICROFILMS—Microfilm by Microstat—If you are considering microfilming of records, reports, graphs, tracings and any of numerous other valuable record and file material for your company, you may find "Microfilm-by-Microstat", describing precision photograph on rolls of safety film having an estimated life of 500 years, of practical help. The method "duplicates anything and everything with absolute accuracy." International Microstat Corp.

■ 23. ELECTRICAL — AUTOMOTIVE — Wagner Electric Corp. has issued 16-page folder (GU-86) describing briefly its entire line of electrical and automotive products: motors, transformers, industrial brakes and controls, hydraulic brakes, air brakes, tachographs, brake lining, brake service, tools, etc.

☐ 24. REFRIGERATION COMPRESSORS— Three bulletins, C-1100 B21, 22 and 23 issued by Worthington Pump & Machinery Corp., describe gas engine refrigeration compressors, capacity 50 to 1,000 tons; horizontal double-acting steam engine driven; and, horizontal double-acting Booster refrigeration compressors. Air Conditioning and Refrigeration Divn.

☐ 25. STELLITE METAL-CUTTING TOOLS
—New catalog covers "Haynes Stellite
Metal-Cutting Tools" made from Haynes
Stellite 98M2 and Star J-Metal alloys. It
includes descriptions, illustrations, engineering drawings, specifications, etc.:
also, recommendations for application.
Haynes Stellite Co.

□ 26. "LIQUID ENVELOPE"—You should have a copy of the booklet bearing this title. It describes an impervious, peelable, plastic film (used as protective coating for warplames enroute overseas) which has many peacetime applications in coating tools, equipment, finely finished metals, wood or plastic surfaces, etc., during manufacturing operations, and other uses. It is termed an easily-removed "plastic wrap for shipping and warehousing." It is odorless and tasteless. 25-year protection of goods in storage is believed to be entirely possible. It can be furnished for application by hot spray, cold spray, hot dip, cold dip and brush application. It's tough, elastic, transparent. Better Finishes and Coatings, Inc.

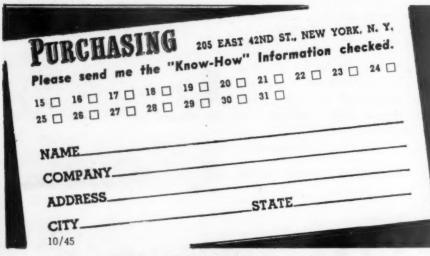
☐ 27. LEAK-PROOF ZIPPERS — Four-page folder describes the Goodrich Company's pressure sealing zipper which is an ingenious rubber construction applied to metal sliding fasteners which will not allow gases or liquids to pass even under high pressure. Various types are pictured and applications in the aviation field listed — pressure doors, wind bulkheads, air ducts, instrument covers, kit bags, etc. B. F. Goodrich Co.

☐ 28. FIRE EXTINGUISHERS—File folder designed to hold information pertaining to fire extinguishers (fits all standard file drawers), is available from the General Detroit Corp. Material printed on inside includes sketches of the five principal types of fire extinguishers, classes of fire for which each is recommended, rating for each, and other data on the operating, recharging and effectiveness of extinguishers.

☐ 29. SNOW MELTING—Snow melting by means of underground hot water or steam wrought iron pipe lines is the subject of Case Study No. 4 released by the A. M. Byers Co. It gives information on five installations: beneath the sidewalks of an office building; in a residence driveway; beneath crosswalks in an industrial plant; in a truck driveway; and in a truck ramp.

☐ 30. BROACHING MACHINES—Bulletin 20000B describes Oilgear fluid power, variable speed horizontal broaching machines for high speed, pull type, all purpose, internal and external broaching. The Oilgear machines come in 9 sizes. Benefits of controlled fluid power are explained. The Oilgear Co.

☐ 31. ELECTRICAL CONTACTS—New 36-page Electrical Contact Catalog and Data Book has been issued by the Stackpole Carbon Co. It contains a wealth of information and data for manufacturers of Continued on page 14



FOUR PAGES OF "KNOW HOW"-10-12-14-16

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### What is Koppers?

this . . . and more!

WHAT IS KOPPERS? Koppers is a company whose divisions serve all industry. Individually, these divisions are among the most important suppliers in their respective fields. For example, take the piston ring business:

Koppers, through its American Hammered Piston Ring Division, is one of the largest manufacturers of piston rings in the world.

In the air, these rings helped set new performance records in Fortresses, fighters, patrol bombers, observation planes and transports.

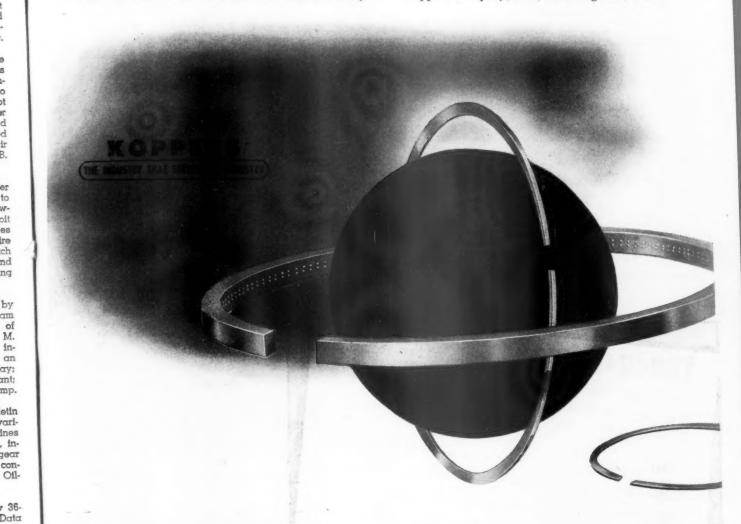
On the sea, they extended the time between engine overhauls on aircraft carriers, escort carriers, Liberty ships, tankers, navy auxiliaries, landing craft and other vessels.

Under the sea, they served in submarines and torpedoes.

On the ground, they have been used in tanks, trucks, "ducks" and jeeps.

In the peacetime economy, they will provide rings for every form of transportation, as well as for pumps, compressors, refrigeration equipment—everywhere and anywhere pressure must be sealed.

Yet the piston ring business is only one of the fields in which Koppers serves industry and the nation. -Koppers Company, Inc., Pittsburgh 19, Pa.



Buy War Bonds . . . and keep them



## "Know-How" Information, Continued USE COUPON ON EACH PAGE

products utilizing contacts. In addition to describing Stackpole materials, the catalog gives worthwhile data on such factors as choice of materials, types, shapes, metal compositions, welding and brazing tips, etc.

- ☐ 32. SYNTHETIC RUBBER—Ameripol D, an oil and heat resistant synthetic rubber for specialized applications is described in new edition of catalog section issued by the B. F. Goodrich Co. Properties of Ameripol D are outlined in detail. Table gives the property relation of natural and various types of synthetic rubber. Illustrations show Ameripol D products of various types.
- ☐ 33. BRONZE BARS Catalog 45 and Circular describe Shook solid bronze bars. Catalog gives complete listings of bushings, bar stock and babbit metals. Solid bronze bars are ¾" to 10" O.D., 13" long. They are completely machined with center holes and need only a 1/64" cut to bring them to the size stamped on the ends. Circular also lists bored bronze bars which are fully machined inside, cutside, and on the ends, and which "save money, time, tools." 400 stock sizes are listed. Shook Bronze Corp.
- ☐ 34. CASE HARDENING—Dry cyaniding is the subject of new bulletin issued by the Surface Construction Co. Process is entirely a gaseous one employing atmospheres which contain carburizing gases and ammonia. Process is particularly adapted to continuous furnaces, assuring uninterrupted flow of materials and uniformity of product. Work comes from the heating chamber absolutely clean and shows substantially no distortion due to heat treatment.
- ☐ 35. CORROSION RESISTANT Materials and Equipment Bulletin H describes the U. S. Stoneware products—Tygon plastic compounds, tanks and lining materials, tubing gasketing paint, chemical stoneware, corrosion resistant masonry, mixing equipment, chemical stoneware tower sections, and tower packing.
- 36. CENTRIFUGAL CASTING—Bulletin 645 describes the Centri-Meco centrifugal casting machine for producing ferrous and

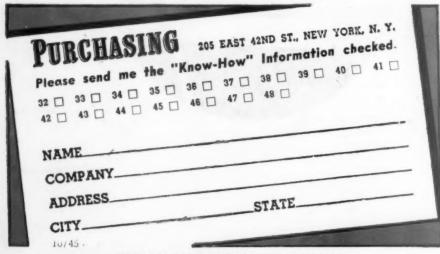
non-ferrous metal castings. The "Miracle Hub" is heat free. Machines are said to be rugged, durable, safe, smooth and vibrationless. Statement is made that sand floor area output can be multiplied ten times by centrifugal casting method. Parts can be "cast to size" in some cases. Centrifugal Machine & Engineering Co.

- ☐ 37. ELECTRONIC TUBES—The Ignitron Tube and How It Is Used is the subject of new General Electric booklet, ETI 21. The booklet gives full explanation of how the tubes are used in welding circuits and for power rectification. Applications in various industries are outlined.
- □ 38. THE JEEP —24-Page booklet done in four colors has been issued by the Willys-Overland Motors, Inc., showing the new Universal Jeep performing a wide variety of industrial and agricultural chores. The text explains its four-in-one usage as a light tractor, a mobile power unit, a light truck, and a passenger conveyance.
- 39. ALUMINUM BRONZE WELDING—Bulletin W-2 describes the Ampco-Trode welding technique. Aluminum bronze does not contain undesirable welding vaporization characteristics. Commonly used materials regularly welded with Ampco-Trode include steel, copper, bronze, brass, malleable iron, cast iron and nickel alloys. It has good bearing characteristics and is extensively used for depositing bearing surfaces. Also, because of its high resistance to corrosion Ampco-Trode is used for fabricating corrosion resistant equipment. Ampco Metal Inc.
- ☐ 40. VERTICAL TURRET MILLS—Rogers vertical turret mills for boring, drilling and turning with specially designed swivel side head which can be set at an angle each side of horizontal up to 35 deg. to facilitate tool setting. Catalog shows boring, turning, drilling and thread cutting set ups. Rogers Machine Works.
- 100% non-cotton cellulose electrical insulating board which is said to have better characteristics than 100% rag board. Dielectric strength ranges from 400 to 600

volts per mil. Because of absence of chemical treatment or sizing, Durok is neutral, has good heat-aging characteristics, readily dries out and absorbs insulating varnish. Stock sheet sizes 36" x 48", and 36" x 24". Thicknesses .015", .020", .025" and .030". Sample on request. Rogers Corporation.

- 42. PRECISION GRINDING—FINISHING—New 12-page booklet entitled "Faster, Better Finishing of Metal, Plastic and Glass" which describes the 3-m Wetordry method of grinding and finishing at high speeds, is available from Minnesota Mining & Manufacturing Co. Booklet explains how method keeps operating heat at a minimum, eliminates distortion, discoloration and plastic flow, and eliminates hazard of dust when grinding glass, etc. Illustrations show industrial applications.
- 43. VIBRATION INSULATION—Bulletin BU-23 describes Vibraflex engine mountings, 20 to 600 lb. load. It contains simplified formula for calculating the proper mounting for any given load and dimension drawing of four typical mountings capable of handling loads of from 20 to 600 pounds. Bushings Inc.
- ☐ 44. PIT JACKS AND PIT TABLES—Bulletin 510-A describes Watson-Stillman line of hydro-pneumatic pit jacks, including drop pit tables Several types are covered—in the hand-pump operated telescope model, the air-engine driven model, the drop pit table model and special types designed to meet unusual conditions. Watson-Stillman Co.
- ☐ 45. CLEANING STEEL for Paint Finishes
  —Technical Service Data Sheet, No. 3-2-210-2, describes Deoxidine for spray application, which is used to simultaneously clean and condition steel products to properly prepare them for durable paint finishes. It explains conditions under which it is used, equipment required, steps in the process, and care of equipment. American Chemical Paint Co.
- ☐ 46. SAFETY CLAMPS Bulletin describes Punch-Lok safety clamps used for banding hose or splicing cable. Clamps are available in two types, the pre-formed which are shaped to slip over sections to be joined, and the open-end, straight bands made to permit curving around hose, cable or other objects that need binding. Industrial Products Sales Divn. B. F. Goodrich.
- ☐ 47. PLATING CURRENT Bulletin describes the new Udylite-Mallory Rectoplater which is produced in two standard sizes. Unit requires little floor space and can be installed right at the equipment it is to serve without special foundation or long bus runs. Maintenance is said to be negligible. Senior unit is built for an output of 1500 amperes at 6 volts or 750 amperes at 12 volts and is said to be ideally suited for majority of electroplating jobs. Junior model supplies 400 amperes at 6 volts. The Udylite Corp.
- ☐ 48. CENTRIFUGAL PUMPS—"Facts You Should Know About Centrifugal Pumps and

Continued on page 16



FOUR PAGES OF "KNOW HOW"-10-12-14-16



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## "Know-How" Information, Continued

USE COUPON ON EACH PAGE

Impellers" is title of booklet available from the Deming Co., which is styled a "text book". Its chief purpose is to furnish an advisory service to persons concerned with the selection and application of centrifugal pumps of all standard types.

☐ 49. MAGNETIC INGOT IRON—New 24-page booklet tells about special advantages of Armco Magnetic Ingot Iron which makes it especially suitable for d-c applications, has been published by American Rolling Mill Co. Product is described as a dense, highly refined open-hearth iron with high conducting power. It is also said to be a good conductor of current in various kinds of electrical transportation equipment. One section deals with fabricating the material.

□ 50. MATERIALS HANDLING—Bay City catalog "L" shows applications of shovels and crames—convertible crawler and pneumatic tire-mounted shovels, crames, draglines, and hoes, trailers and dragline buckets. Illustrations are designed to aid in the selection of the right size and capacity machine for most any job. Bay City Shovels, Inc.

□ 51. HIGH VACUUM PUMPS — Bulletin covers Stokes Microvac High Vacuum Pumps, which are described as having higher volumetric efficiencies and lower power requirements, and greater simplicity than the models they replace. Pump is a self-contained unit of rugged construction, F. I. Stokes Machine Co.

☐ 52. OXYGEN—How it is made and how it is used in industry is the subject of new 24-page two-color booklet "Oxygen—Indispensable Servant of Industry", available from Air Reduction. Sections explain the different types of "packages" for varying oxygen requirements, operating conditions, and internal plant gas distribution methods. There are also descriptions of hand and mechanical welding, flame hardening, flame cleaning, underwater cutting, hand and machine gas cutting and other flame processes. Air Reduction Sales Co.

☐ 53. SEALS AND RINGS — Morganite seals and rings, termed friction-minimizing, for compressors, liquid and gas pumps,

torque converters, meters, automotive and aviation devices, etc., are illustrated and described in six-page circular available from Morganite Brush Co. Seals and rings are available in any size or shape up to 20" (one piece) in diameter and variable thicknesses. Products are said to have high density, offer absolute sealing, excellent for high speeds, pressures, temperatures, and to assure longer life because of self-lubricating qualities.

□ 54. CURVED TOOTH FILES—Buyers of curved-tooth files will find new catalog of American Swiss Milled Curved-Tooth Files of special interest. It shows the complete range of types, sizes and cuts. These include flexible file blades, both regular and narrow widths, and rigid file blades in half-round shell, moulding, half oval bent, half circle and special curved fender and window reveal types. Also shown are tanged rigid files. Files are claimed to actually chip or shear off metal shavings. American Swiss File & Tool Co.

□ 55. FULL DOWN BROACHING MACHINES—Four-page, two-color folder (VMS-45) describes Colonial Broach Company's Pull-Down broaching machines. They are suitable for broaching internal work on a high production basis, and for broaching large or heavy parts since these can be laid on top of the machine platen for firm support. Pictorial spread shows Pull-Down machines at work. Machines range in size from 3 tons with a 24" stroke to 25 tons with a 60" stroke.

☐ 56. VIBRATION CONTROL—The effects of vibration on plants, equipment and personnel and methods of controlling vibration are explained in new 12-page bulletin "Vibration in Industry" published by the Korfund Company.

☐ 57. SILICONE RUBBER — Silastic, Dow Corning's revolutionary new family of elastic silicone products, is a group of rubbery organo-silicon oxide polymers characterized by their exceptional heat resistance. They remain resilient at temperatures up to 500 deg. F., and retain flexibility at temperatures down to -70 deg. F. Silastic is an arc-resistant non-tracking, waterproof, flexible silicone dielectric. It is available

in stocks designed for molding, extruding, coating, laminating. Circular describes silastic in detail. Dow Corning Corp.

☐ 58. MACHINE TABLE BOLTS—Circular lists and describes Cad machine table bolts, T-Slot nuts, clamps, wedges, T-slot nuts, extension nuts, step blocks and other accessories. Standard Shop Equipment Co.

□ 59. ADHESIVES—New 12-page booklet, "3-M Adhesives in Industry" which should be helpful to buyers of adhesives, sealers, coating or insulating compounds, impregnators and sound-deadeners, has just been released by Minnesota Mining & Manufacturing Co. It illustrates and describes adhesive operations in different industries, methods of application, and gives listing of physical properties. It lists various formulae, and shaws the viscosity, bonding, range, color, weight, characteristics and uses and Government specifications.

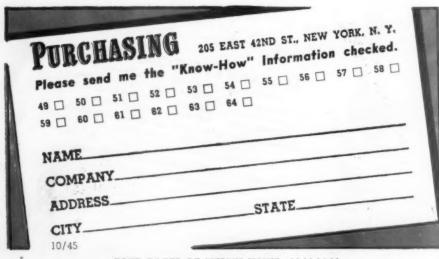
☐ 80. MOTOR VEHICLE FIRES—"How to Put Out a Motor Vehicle Fire" is title of pocket size book published by Fire Extinguisher Division of General Detroit Corporation. Book consists of 32 pages profusely illustrated. It tells how to put out ignition fires, gasoline fires, fires in the interior of the car, under the hood, and under the car itself. I. C. C. safety regulations are included.

□ 61. SWITCHBREAKER—16-page bulletin describes the Lewis Switchbreaker manufactured by the Code Electric Products Corp. Only controlling part is handle which operates manually the same as other switches. Should short circuit or abnormal overload occur, switch will automatically drop to off position. Switch is termed absolutely fool-proof. It is said to be far superior to fuses for protection of 220 volt house service, appliance and motor circuits.

☐ 62. INDUSTRIAL CHEMICALS — Pennsylvania Salt Manufacturing Co. has pocket-size booklet "Pennsalt Industrial Chemicals and Specialties". Industries using these products are listed. Booklet includes resin type and silicate type corrosion-proof cements.

Company has issued "Quiz Kit"—Wm. Powell Company has issued "Quiz Kit" whose purpose is to make valve selection easier for sellers, buyers, installers and users. Kit is made up of "Quiz Kit" advertisements, and though space limitations made it impossible to go into minute detail, the salient features of valve design and construction are emphasized in each "quiz" ad. Types of valves are illustrated, and uses explained. The Wm. Powell Co.

PRIMER—That is title of booklet published by the Federal Products Corporation and which is offered free to any concern considering the use of Quality Control methods or which has decided to establish Statistical Control methods in their plant. Sample work and Chart sheets are enclosed with each Primer, extra copies of which are available at nominal cost. The primer simplifies the subject of Statistical Quality Control.



FOUR PAGES OF "KNOW HOW"-10-12-14-16

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# Speed RECONVERSION with Time-Saving SKILTOOLS!

These portable electric tools speed every drilling, sawing, sanding and cutting job on wood, metal, masonry products and compositions. They will help you complete your change-over work quicker . . . enable you to swing into full peace-time production sooner.

Every SKILTOOL is light, compact, powerful, easy to handle . . . and there is a complete range of sizes and models, assuring you of the right tool, in the right size, at the right time. Call your distributor today for a demonstration!

SKILSAW—speeds countless cutting jobs in wood or metal...removes worn out flooring . . . builds bins, shelves, partitions faster . . . speeds crating or uncrating of machinery.

SKILDRILL—speeds all drilling in wood or metal on electrical, plumbing and carpenter jobs . . . use later in production drilling . . . 14 models, 1/4 to 7/8 inch capacity in steel.

SKILSANDER—Belt Type—speeds refinishing of all flat surfaces of wood, metal or compositions . . . reclaims used wood or metal . . . refinishes desks, tables, etc. . . . use later for greater efficiency in production.

SKILSANDER—Disc Type—speeds cleaning and refinishing of all concave or convex surfaces of wood or metal . . . ideal for production work, grinding welds or polishing many products.

SKILGRINDER—Spindle Type—
speeds grinding of irregularities in
metals . . . removes heavy weld beads
. . . use later to step up grinding and
finishing operations in production.

SKILGRINDER—Bench Type speeds sharpening of many types of tools . . . twist drills, taps, chisels, cutters, etc. . . place them in convenient spots throughout the plant. SKILSHEAR—speeds the cutting of hot rolled steel up to 16 ga., and softer materials in proportion . . . ideal for sheet metal fabrication in repair, maintenance or production work.

SKILNIBBLER—speeds cutting without distortion of hot rolled steel or galvanized iron up to 14 ga., softer materials in proportion . . . light, perfectly balanced, easy to handle.

SKILBLOWER—speeds cleaning dust and dirt out of stock bins, shelves, motors, radiators, etc.... delivers dry air at high velocity under low pressure ... easily converted into a vacuum cleaner by using suction attachments.

SKILSAW, INC., 5033-43 Elston Avenue, Chicago 30, Illinois
Factory Branches in All Principal Cities



# BROAD RANGE OF AVAILABLE UNITS TRANSFORMATION

## ...LINK-BELT

A Link-Belt power transmission engineer has no one's ax to grind—except his customer's. Not confined by a limited line—he can recommend the type of speed reducer—the type of bearing—the type of chain drive—the exact power transmission units best suited to his customer's needs. Link-Belt engineering advice on your power transmission problems is completely unbiased. There is no reason for it to be otherwise.

LINK-BELT COMPANY Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Dallas 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8. Offices, Factory Branch Stores and Distributors

in principal cities.

## Trifles make perfection but perfection is no trifle

KENNEDY
METAL IS
STRONG
because these fibres

The fibres you see in the small circular reproduction of a microphotograph (enlarged 100 times) of Kennedy iron body valve metal section are graphite.

When these fibres are long, wide and connected with each other, as in many examples of ordinary cast iron, the metal structure is coarse, irregular, weak and brittle. However, the short, thin, separated graphite fibres of the special metal used for all Kennedy iron body valves, permits a dense, uniform tough structure which is far stronger than ordinary cast iron.

This is why Kennedy valves excel in strength, as they also excel in features that provide greater efficiency and convenience of operation. Learn ALL the Kennedy iron body and bronze valve details and you will quickly see the advantages of standardizing on these valves for all standard services.

THE KENNEDY VALVE MFG. CO. ELMIRA • NEW YORK

One of a series of advertisements explaining how Kennedy gives careful attention to the details of valve design, construction and workmanship that provide maximum effectiveness, convenience, and length of service.



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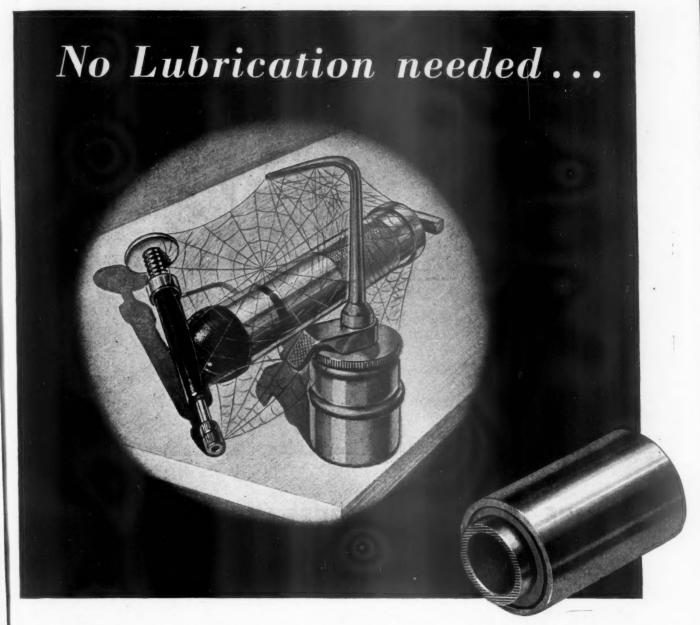
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#### ... if your product has Silentbloc Torque Bearings

IF you are seeking a basic improvement for equipment that works with torque action or oscillation, this is it—
The General Silentbloc Rubber Torque Bearing.

Check the selling points added to your product by Silentbloc bearings:

No lubrication; no spoilage from dripping oil. Unaffected by grit, dust, oil, water or gases. Silent operation. Long, trouble-free life.

No other rubber bearing matches the efficiency of the Silentbloc. The patented construction—elongating rubber at high speed between metal sleeves—gives non-

slipping adhesion and even distribution of compressive stress, vital for long life.

General engineers can help you design a Silentbloc bearing for your specific needs in amplitude and operating conditions. Silentbloc bearings can be made in any size, using any metal and rubber. They are simple to design into your product and easy and economical to install.

For full information, write for booklet on Silentbloc Bearings, Mountings and Bushings; or see Silentbloc Section in Sweet's Product Designers File. The General Tire & Rubber Co., Dept. 104, Wabash, Indiana. Patented Silentbloc principle of elongating and confining rubber between metal members produces a virtually indestructible adhesion and uniform stress, resulting in precise performance and long life.





Mechanical Goods Division, Wabash, Ind.

THE GENERAL TIRE & RUBBER CO.

Makers of America's Top-Quality Tire



## WHERE THE THE DEGREE IS NOT ENOUGH

## The Chemical Industry Demands Absolute Accuracy... BOWSER LIQUID CONTROL PROVIDES IT

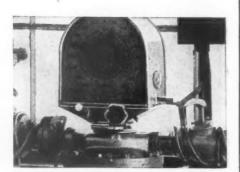
Infinite care must be exercised in the manufacture of chemicals. Every drop, every particle of every element must be measured, counted, weighed. The finished product must check exactly with the equation. Public health is often at stake. There can be no margin for error.

Precision equipment is a must. That's why you'll find many Bowser Automatic Xacto Meters used by the Monsanto Chemical Co., one of the nation's largest and best known manufacturers of chemicals for industry and the home.

Bowser Xacto Meters are as simple to operate as they are accurate. The quantity pre-determining mechanism, with which they can be equipped, assures delivery of the exact amount of the liquid desired. There's no chance for error. Bowser Automatic Xacto Meters save time, save labor, save money, prevent waste. And remember, there are many types of Bowser meters and dials for handling a wide variety of liquids.

This is just one phase of Bowser Liquid Control. Other Bowser equipment such as filters, proportioners, lubrication units, pumps, etc., are daily proving their indispensability in every type of industry. No matter what your liquid control problem may be, there is a Bowser unit to solve it. A Bowser engineer will be glad to consult with you. Write BOWSER, INC., Dept. 22-J, Fort Wayne 2, Ind.





One of the Bowser Automatic Xacto Meters in the St. Louis plant of Monsanto Chemical Company



Not only has Bowser's war production earned the Army-Navy E... Bowser equipment has helped earn it for scores of other companies.

THE NAME THAT MEANS EXACT CONTROL OF LIQUIDS



Pliobond for <u>Home</u> use will soon be available at your neighborhood store

earned

panies.

UIDS

THE GOODYEAR TIRE & RUBBER COMPANY

\*Trademark registered, The Goodyear Tire & Rubber Company

PLIOBOND\* is a product of



## Delta Hand Files Do 25% More Work

Actual scientific tests which show that on the average Delta Hand Files will do 25%—more work in the same time with the same effort—than other makes than diles.

of hand files.

This is due to the fact that Delta Files are precision made. Each sturdy tooth digs deep into metal. Tests also showed Delta Files still cutting deep and clean long after competing files were no longer useful.



DELTA FILE WORKS, PHILADELPHIA 37, PA.

Fast! Cuts hours to minutes! Even experienced production men are amazed at the way Delta Rotary Files step up the output of work—a requirement of extreme urgency in reconversion to consumer products.

New workers—whether they are women or returning veterans, unused to handling tools—can use a Delta Rotary File with full efficiency. Tough jobs, grinding, burring, smoothing—are done quickly—and at less cost.

Order now—specify Delta, the highest grade file made. Get more production at lower cost.





This dental unit tray arm is continually carrying a heavy burden. Made of solid aluminum, it does not need the steel inserts or "crutches" required when other metals are used.

The ability of Alcoa Aluminum Alloys to stand up under sustained loads is outstanding. No creeping to cause sagging. Aluminum is an ideal metal to employ in die castings which go into cantilever designs. It will pay you to investigate the use of Alcoa Aluminum die castings. Parts have uniformity and surfaces are smooth. Close tolerances and thin

sections are possible.

ALUMINUM COMPANY OF AMERICA, 1931 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA ALUMINUM





What! Horse Collars Aboard Ships? \* To the ordinary landlubber this is only a queer looking piece of pipe; but to the marine engineer it is a Morison Type Corrugated Furnace, one end horse collar, other end plain. Such furnaces are a vital part of the compact, sturdy and efficient Scotch Marine Boilers that power so many small cargo vessels. For more than 30 years Taylor Forge has been the leading

American maker of these fireboxes. Experience thus gained bas added its share to our knowledge of how hot metal behaves -how to make it go where you want it to go.

ES, if you know how to make forging-temperature metal go where you want it to go, and in the right amounts, there are a lot of things you can do-and do better. Take Welding Fittings, for example, specifically welding elbows. You can have:

- Full pipe wall thickness at all points plus the right amount of reinforcement to provide full, uniform strength . . . as WeldELLS have.
- Tangents that help in lining up and keep the welds away from the zone of highest stress . . . as WeldELLS have.
- Perfect circle cross section for best flow conditions . . . as WeldELLS have,
- Finest metallurgical structure for greater strength . . . as WeldELLS have.

If you add such features as quarter-marked ends, permanent and complete identification marking, machine tool beveled ends, extreme dimensional accuracy, then you have fittings like WeldELLS: for indeed-

TAYLOR FORGE & PIPE WORKS, General Offices & Works: Chicago, P.O. Box 485 New York Office: 50 Church Street Philadelphia Office: Broad Street Station Bldg.

- · Seamless greater strength
- zone of highest stress-simplify lining up.
- Precision quarter-marked ends -simplify layout and help insure accuracy.
- · Selective reinforcement provides uniform strength.
- · Permanent and complete identification marking-saves time and eliminates errors in shop and field.
- Wall thickness never less than specification minimum -assures full strength and long life.
- · Machine tool beveled ends—provides best welding surface and accurate bevel and land.
- The most complete line of Welding Fittings and Forged Steel Flanges in the World - insures complete service and undivided responsibility.



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## One is right for some jobs ... one is right for others ... Only Bristol gives you BOTH!

Many machine builders are adopting this practice: for ordinary socket screw purposes—hex; for small sizes, vibration conditions, frequent disassembly—"Multiple-Spline".

These builders have decided that doing business with Bristol gives them several advantages:

- 1. Bristol (alone) offers both hex and "Multiple-Spline".
- 2. The BRISTOL Hex assembles faster and holds tighter than ordinary hex because of several unique manufacturing procedures.
- **3.** The BRISTO "Multiple-Spline" tightens further, without being damaged, than any hex—yet is easily loosened with a wrench.

#### BRISTOL Hex has more strength than ordinary hex

Extra surface hardness and elasticity (particularly under the head) result from Bristol's exclusive method of cold-upsetting and extruding high-grade alloy steel. The same method is also used for thread-forming, giving more accurate lead and pitch (for Class III fit).

#### BRISTO "Multiple-Spline" has more strength than hex

This screw will turn safely long beyond the point where the socket of a hex screw would round out or burst. Reason: the "spline" design of socket and key creates a rotary pull, rather than expanding pressure. For the same

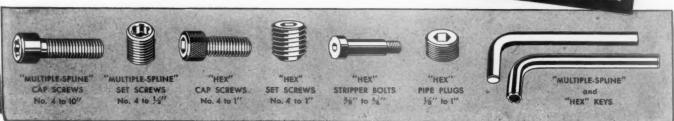
reason, a flick of the key will loosen it.

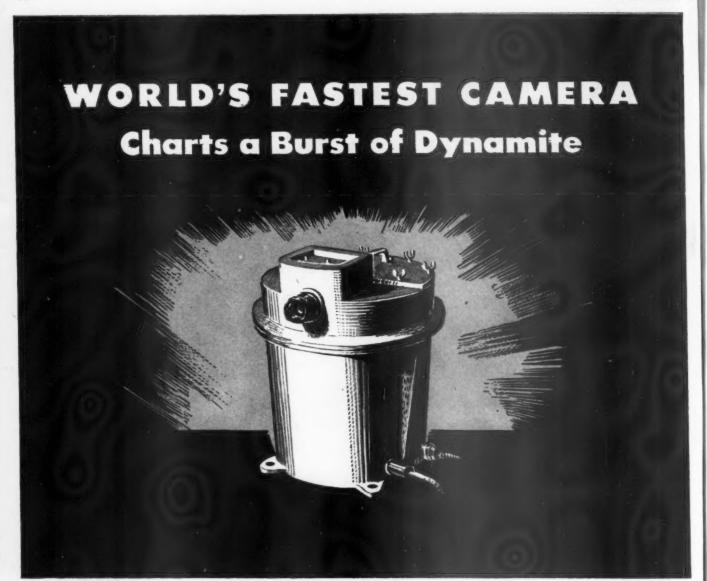
So, for ordinary purposes, the Bristol Hex is right. For special cases, the BRISTO "Multiple-Spline" is right. Only Bristol makes both. Order from your distributor.

The Bristol Company, Mill Supply Division, 132 Bristol Road, Waterbury 91, Connecticut.



Only the "B LINE" offers you the right socket screw for every application





TO CAPTURE pictures of explosives in action, Hercules scientists designed and built the world's fastest camera. Operating at exposures as fast as one ten-millionth of a second, this amazing instrument photographs dynamite at the very instant of its violent chemical change. Even powerful nitroglycerin's path of detonation, traveling at 250 miles a minute, is "stopped" on film by this shutterless, electrically operated camera.

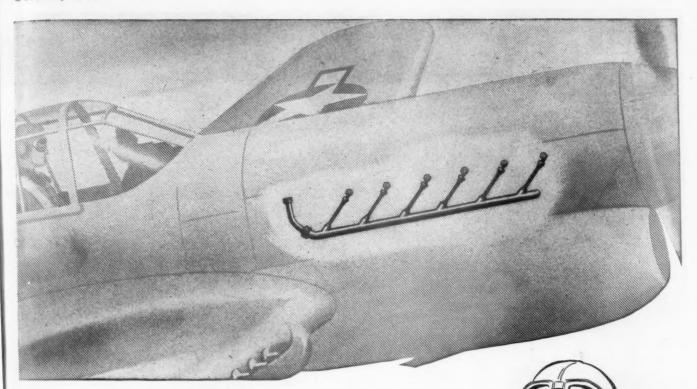
This study of how explosives behave is only a small part of the intensive research being conducted daily by Hercules. Physicists, x-ray workers, microscopists, and other highly trained specialists are constantly searching for new and valuable knowledge on explosives which may prove helpful to you and your business.

#### -HERCULES EXPLOSIVES---

EXPLOSIVES DEPARTMENT

HERCULES POWDER COMPANY

944 MARKET ST., WILMINGTON 99, DEL.



## Keeping an Ignition System off the Air

EVER hear somebody's electric shaver over your radio? That's the kind of noise, many times multiplied, a pilot would hear in his radio earphones if the ignition wiring on his plane were not properly shielded.

So, to prevent an ignition system from becoming a broadcaster . . . interfering with clear radio reception, the complete ignition harness is enclosed in a sheath of braided copper alloy conduit.

The braided shielding must withstand a wide range of temperature changes, from sub-zero to intense heat . . . the severe vibration of high-powered aviation engines . . . the terrific beating of tremendous wind pressures. Then, too, the higher the altitude the more difficult it becomes to prevent the leakage of electrical current. And to further complicate the problem, radio equipment is being constantly improved for greater sensitivity.

Braiding copper alloy wire for this important shielding function must be a precision job of fabrication to meet the exceedingly high specifications for Army and Navy planes.

Here at National-Standard we have developed methods of producing a uniform high quality of wire braided flexible conduit to successfully meet the extreme service requirements of some of America's fastest flying planes.

Today we have machinery available to braid steel, brass, copper, stainless steel, and monel metal in tubular lengths from 1/16" to 16" in diameter. Let National-Standard's unique manufacturing facilities and 38 years' experience help you with your wire and wire fabricating problems.



BUY AND KEEP WAR BONDS AND STAMPS

TIRE WIRE, FABRICATED

BRAIDS AND TAPE

NY

Divisions of National-Standard Company

NATIONAL-STANDARD CO. THE ATHENIA STEEL CO. Niles, Mich.

Clifton, N. J. COLD ROLLED, HIGH-CARBON SPRING STEEL

WORCESTER WIRE WORKS Worcester, Mass.

ROUND STEEL WIRE, SMALL SIZES ( O.

WAGNER LITHO MACHINERY CO.

Hoboken, N. J. LITHOGRAPHING AND SPECIAL MACHINERY







#### And now it's

## UNCONDITIONAL SURRENDER

#### --- FOR OLD MAN CORROSION

 Old Man Corrosion is a tough customer. His relentless attack causes rust, decay, corrosion of all types of inadequately protected surfaces. But he must submit to unconditional surrender when he finds equipment or buildings protected with Permite Ready-Mixed Aluminum Paint.

For while Old Man Corrosion is a tough foe, he is no tougher than the coating of overlapping aluminum flakes imparted by Permite Ready-Mixed Aluminum Paint. The metal-like Permite finish is stubbornly resistant to fumes, moisture, heat, cold and other destructive elements. The specially developed synthetic vehicle used only in Permite seals the 99+% pure aluminum pigment into a smooth, lustrous finish of such exceptional durability that you save the cost of frequent repaintings. You save on labor costs too, as Permite Aluminum Paint is completely ready-mixed. No time-wasting mixing on the job.

Use Permite for better protection - for true painting economy. Ask your Permite Distributor, or write for full information.

#### ALUMINUM INDUSTRIES, Inc., Cincinnati 25, Ohio

Distributors in Principal Cities

The Permite Line of Industrial Finishes includes Synthetic Enamels, Lacquers, Lacquer Enamels, Varnishes - also Government Specification Finishes.



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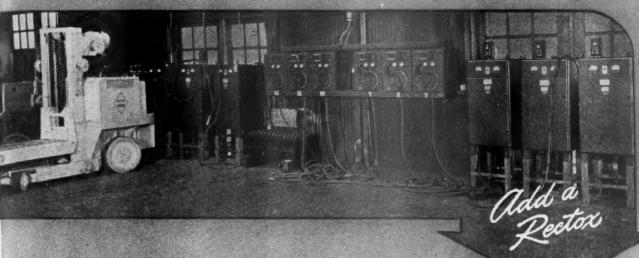
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E READY ALUMINUM PA



BRING YOUR CHARGING-ROOM CAPACITY

up-to-par

## WITH CHARGERS

The Westinghouse Rectox Industrial Battery Charger is a complete, fully automatic truck battery charger, requiring only an a-c power source. It's built for 24-hour service—to fully charge a battery when desired—and can be used to give the battery an additional "boost" charge at noon hour, or at any "off-duty" time. It's simple to operate; needs only plugging in of the battery and turning the time switch. Rate of charge, timing, prevention by the d-c interrupter of "flow-back" or leakage from the battery through the rectifier...and automatic "cut-off" at the end of the charge—are all automatic with RECTOX, and require no supervision or skilled operator. The Rectox is foolproof.

RECTOX is the perfect solution to "bogged down" charging-room facilities. Add Rectox Chargers, till your charging capacity equals your needs—no more. Better still, Rectox flexibility provides your way out of charging-room crowding. You can install Rectox anywhere in your plant where there is an a-c power outlet—in the charging room, or at the working area. Rectox-equipped plants invariably are truck-headache free. Consult your nearest Westinghouse office for the full story of RECTOX economy and efficiency; or write WESTINGHOUSE ELECTRIC CORPORATION, P. O. Box 868, Pittsburgh 30, Pa.



EASY TO MOVE—Install it anywhere (no foundation needed) there is an a-c power outlet...in charging room or "on-the-job".

DEPENDABILITY—Rectox rectifiers have operated "trouble-free" for better than 16 years.

**REVERSE CURRENT PROTECTION**—is inherent without the use of relays.

AUTOMATIC AND FOOLPROOF—Plug it in and turn the time switch. From then on RECTOX is in the driver's seat—and invariably plots a perfect charging course.

FCONOMY—Its lower power cost results from its high efficiency—maintained to approximately 25% load.

NO "FLOW-BACK"—The Rectox d-c interrupter, between rectifier and battery, completely blocks any "flow-back" from the battery.



Westinghouse
PLANTS IN 25 CITIES ... 9 OFFICES EVERYWHERE



BATTERY CHARGERS

# ASBESTOS IN ACTION



"Century" ASBESTOS CORRUGATED

... and little jobs, too

Many of the country's leading industrial plants enjoy the advantages of K&M "Century" ASBESTOS CORRUGATED roofing and siding.

#### WHY NOT HAVE THESE SAME ADVANTAGES IN YOUR PLANT?

TOUGHNESS... asbestos fibres and portland cement are combined under tremendous hydraulic pressure to form a sheet of asbestos corrugated.

ADAPTABILITY... suited for new construction or additions and repairs to existing structures. Comes in one standard width, and in 19 different lengths adaptable for every need.

ATTRACTIVENESS... does not require painting or surface finish of any kind... has its own pleasing, practical finish.

ECONOMY... an actual money-saver... is maintenance-free for the life of the structure. Will not rust or corrode.

FIRE-RESISTING . . . this means no risk, lower insurance rates and a completely fireproof wall and roof.

TIME-SAVING . . . installation time is reduced to a minimum, so, here too, low costs are maintained.

Save time and money the "Century" way ... bring your problems to your authorized Keasbey & Mattison distributor. He is well supplied to meet your material and installation requirements for "Century" Asbestos Corrugated and Flat Lumber.

Nature made Asbestos . . . "Century" Asbestos Corrugated and Flat Lumber is an outstanding example of how Keasbey & Mattison has made Asbestos serve modern construction.

KEASBEY & MATTISON
COMPANY · AMBLER · PENNSYLVANIA

D



## BROWN & SHARPE CUTTERS



• For many years Breeze has been recognized as the General Headquarters for Radio Ignition Shielding. The reputation which the products bearing the Breeze Mark of Quality built up on national and international airlines before the war has now been

augmented by the service record of thousands of Breeze Shielding Assemblies for America's famous fighting aircraft, tank, marine and commercial engines. Now that final victory has been won, Breeze returns to production of Shielding for commercial applications without delay for reconversion. And the reservoir of Breeze Shielding experience so materially increased in maintaining dependable communication in war, once again is available to help pace progress in peace.





A lot of industries have taken a fresh hold on the sling question as a result of war production. And what a grip they get by using the adaptable Yellow Strand Braided Safety Sling! After handling just about every extreme in lifts — from multi-ton ship sections, tanks and guns to light-weight parts, jigs and crates—this improved type of sling is today primed to speed your assembly line, shop or field operations.

Tough Yellow Strand Wire Rope provides the sling's strength. The patented *braiding* adds flexibility, kink-resistance and a snug grasp on odd-shaped, rounded or slippery objects. The combined result is a time-and-labor-saving sling with less weight and bulk than chain of like capacity... with limberness well suited to former Manila rope jobs... with security that safeguards both employees and loads.

Properly fitted, Yellow Strand Braided Slings will give long-lived, economical service. Send details of your application now and let B&B engineers offer a recommendation. Broderick & Bascom Rope Co., St. Louis 15, Mo. Branches: New York, Chicago, Houston, Portland, Seattle. Factories: St. Louis, Seattle, Peoria.



RIGGERS' HAND BOOK FREE Shows sling types, fittings, capacities. Write for your copy.

> \*PATENTS: U.S., 1478899, 1834871 2142641, 2142642, 2239668; CANADIAN, 252874, 288088

ERSEY

TYPES



## The Safety Director... Industry's No. 1 Morale Builder

War's slaughter steels human hearts to better withstand death's realities. But when human values are weighed in happier days accidents will hold all their peacetime horrors, bringing nerve-shattering tension that undermines plant morale and cuts production energy. That is why more management men are consulting the Safety Director about even greater protective programs for peacetime production. This provision for higher plant morale can well be the advantage one company may have over another when manufacturers once again are striving for greatest possible share of a competitive market.

#### FREE 64-PAGE BOOK!

Send for your illustrated copy of Hy-Test's Safety Engineer's Digest, "Let's Use Our Heads and Save Our Feet," written expressly for "those who believe toes are worth say. ing." It offers a complete guide to greater foot pro-

tection for your workers.



9C



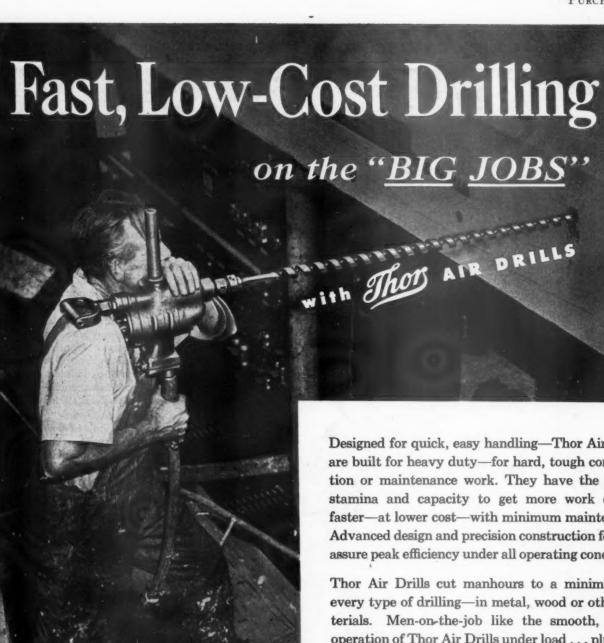
HY-TEST Safety Shoes

INTERNATIONAL SHOE COMPANY

0.

LOOK INSIDE THE Machine FOR NEW ECONOMIES IN ANY INDUSTRY





Designed for quick, easy handling—Thor Air Drills are built for heavy duty-for hard, tough construction or maintenance work. They have the power, stamina and capacity to get more work donefaster-at lower cost-with minimum maintenance. Advanced design and precision construction features assure peak efficiency under all operating conditions.

Thor Air Drills cut manhours to a minimum for every type of drilling-in metal, wood or other materials. Men-on-the-job like the smooth, steady operation of Thor Air Drills under load . . . plus their lack of vibration-all vital factors in dependable,

low-cost operation. IN-DEPENDENT PNEU-MATIC TOOL COM-PANY, 600 W. Jackson Blvd., Chicago 6, Illinois, New York, Los Angeles.



Above: A No. 362-RWX Rotary Drill boring 1 1/8" holes in deck girder and beam on wooden minesweeper.



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RIC



PLUG — typical of the many molded parts for electrical and ignition systems where extreme accuracy resulting from uniform compounding and curing, and fine finish are necessary.



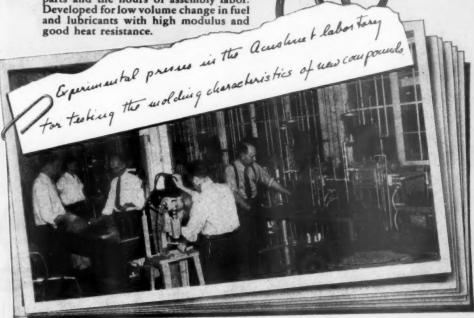
OIL SEAL RINGS—typical of millions molded by Acushnet, ranging in inside diameter from 1/4" to 20". . . . Compounds are available for low or high swell as desired.



a substitute material, synthetic rubber packings have reduced both the cost of parts and the hours of assembly labor. Developed for low volume change in fuel and lubricants with high modulus and good heat resistance.



bellows protects the part contained from external dirt, dust and abrasion.





INTAKE PIPE CONNECTION
SEAL — this, like most items
shown on this page, is made
to AMS specifications. This
connection seal is made to
AMS 3212.

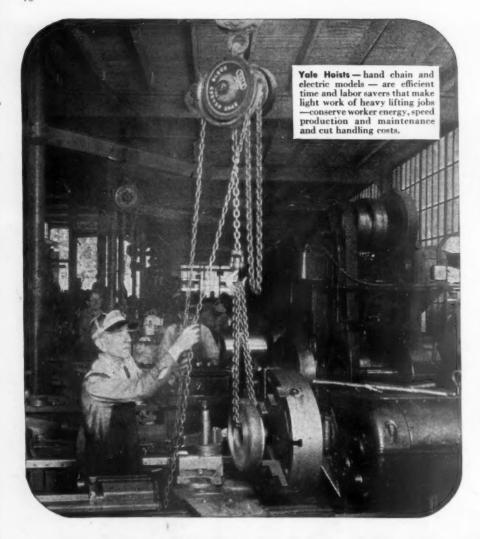
ACUSHNET

RUBBER AND SYNTHETICS

PRECISION . MOLDED



The same experience and skill and painstaking effort which has won Acushnet five Army-Navy "E" Awards is at your service—war orders permitting. Acushnet Process Co., New Bedford, Mass.





Yale Electric Industrial Trucks save time and effort—are power-packed to speed the movement of tremendous tonnage per day—travel fast and maneuver easily in congested areas. High lift models save storage space.



#### **Every Lift Boosts Production Economy...**

... whenever powerful, efficient Yale Materials Handling Machinery and methods are employed to save time, to conserve worker energy, and to permit skilled craftsmen to concentrate on *production*.

For in doing these things, hidden costs in lifting and shifting materials are wiped out—costs which, unrepresented by any single item on your books, nevertheless contribute to high production costs.

Boost production speed and economy in your plant. Use Yale Hand and Electric Hoists, Hand Lift and Electric Trucks for efficient materials handling, and Kron Scales for accurate weighing, counting, batching, measuring and testing.

All the facts about easy-to-use, cost-cutting, "safety first" Yale Materials Handling Machinery are yours for the asking. Phone our nearest representative or write to the Yale & Towne Manufacturing Co., 4530 Tacony Street, Philadelphia 24, Pa.

Kron Springless Dial Scales made by Yale, eliminate excessive time and money-wasting handling operations, provide accurate, efficient, lowcost weighing and counting of all kinds of materials. Available in all types from bench to crane scales.



Wheel Types and Sizes for Every Grinding Job RECONVERT Distributor, Warehouse and Factory Stocks NORTON Skilled Abrasive Engineers the Country Over Research Facilities for New Product Development WHEN reconversion brings new grinding problems Norton is ready with both the facilities and the knowledge to solve them for you — with wheels in the sizes and shapes, abrasives and bonds for every grinding job — with distributor stocks in 184 cities and warehouse stocks in five industrial centers - with skilled abrasive engineers to give you real engineering help - with extensive research laboratories to develop new wheels for new grinding problems. NORTON COMPANY, WORCESTER 6, MASS, Behr-Manning, Troy, N. Y. is a Norton Division

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rugvide er fast and lling llets.

Francis

CALES



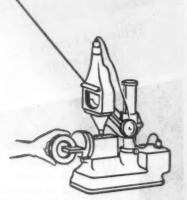
FROM ENGINEERING
TO INSPECTION!



BUY BONDS FOR VICTORY

\* PRECISION PACE-SETTERS

Regardless of what your post-war product is, the basic yardstick for selecting a precision parts manufacturer is productive skill, volume capacity and maximum economy. On all three counts, API fills the bill. With two big plants under single control your job, no matter how simple or complex, is run complete in one organization . . . from engineering through primary and secondary machining operations . . . plus an inspection setup rated "tops" in the business. Our book on plant facilities and equipment reveals a lineup worth boasting about. WRITE, and SEE!



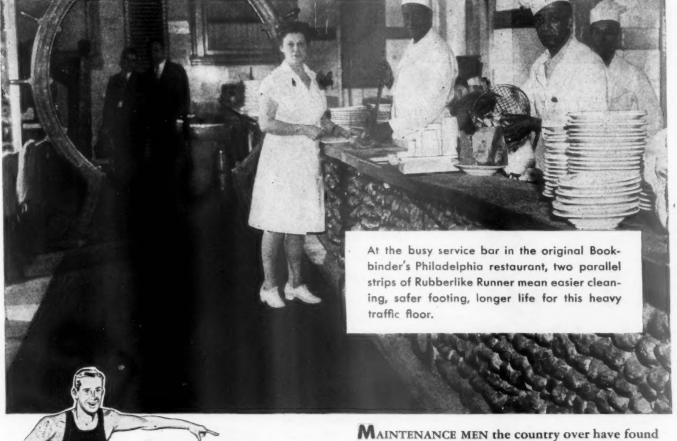
"IT'S A JOB FOR AERONAUTICAL PRODUCTS"

AERONAUTICAL PRODUCTS, INC.

Ohio Plant: Washington Court House, Ohio

#### LOW-COST, LONG-LASTING FLOOR PROTECTION WITH

## RUBBERLIKE the Marathon RUNNER



The

10-SECOND STORY OF

LONG LIFE . HEAVY DUTY . SKID-PROOF NO SPECIAL UPKEEP . QUIETS TRAFFIC HUGS ANY FLOOR . EXTRA RESILIENT NO CEMENTING NECESSARY . LOW COST

Reg. U.S. Pat. Off.

1795-1945 OUR 150th ANNIVERSARY MAINTENANCE MEN the country over have found that Rubberlike, the modern composition runner, saves floors from the wear and tear of punishing foot-pounding. It's on the job at the original Bookbinder's, famed Philadelphia restaurant, and in hospitals, schools, hotels, institutions, offices, factories, gymnasiums - wherever heavy traffic takes a toll

When it comes to low-cost, long-lasting floor protection, Rubberlike goes a long way to prove its worth. Put it to the test on your toughest traffic spots. Note how the sturdy corrugations cushion footsteps, quiet traffic, make cleaning easier. Note, too, that water doesn't make it slippery - a boon where tracked-in rain or splashings are a safety hazard. Watch it hug the floor without cementing. See how the edges lie flat without curling.

Yes, Rubberlike gives longer life to good floors, new life to old. It lasts and lasts - no wonder maintenance men call it the marathon runner! Here's PRACTICAL FLOOR PROTECTION AT LESS THAN 6¢ PER SQUARE FOOT - available in 36" width, 25 yards to the roll. Order from your supply house or write for free sample to Bird & Son, inc., Dept.

1310, East Walpole, Massachusetts.



ASPHALT SHINGLES . INSULATED SIDINGS . INSULATION BOARDS . BUILDING PAPERS FLOOR COVERINGS . WALLBOARDS RUBBERLIKE FLOOR RUNNERS . INDEX PRESSBOARDS . SHIPPING CONTAINERS SHOE CARTONS . BUILT-UP ROOFS . BIRD-FIBRE WOOD FRAME CASES

## Use Wagner Protected Motors for Jobs Involving Dust, Fumes, and Moisture

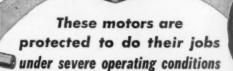
WAGNER DRIPPROOF MOTORS are so designed and constructed that drops of liquid or solid particles falling on the motor at any angle not greater than 15 degrees from the vertical cannot enter the motor either directly or by striking and running on a horizontal or inwardly inclined surface.

WAGNER TOTALLY-ENCLOSED

FAN-COOLED MOTORS are designed to operate under severe and adverse conditions in locations where dust, dirt, abrasives, steel chips, fliings, acid fumes, and other harmful elements may

elements may damage the

windings and bearings.



Do you use motors "in hazardous locations" or perhaps where splashing liquids are present, or where the air contains dust, dirt, acid fumes, etc.? No matter how severe the operating conditions, Wagner has the right motor that is adequately protected against such hazards. Check the advantages gained from using these five types of protected Wagner motors. Then

let a Wagner motor authority help you decide which type will solve your motor problem.

WAGNER EXPLOSION-PROOF MOTORS have been approved by the Underwriters Laboratories for Class I Group D hazardous locations, "where gasoline, petroleum, naphtha, alcohols, acetone, lacquer solvent vapors, or natural gas

are manufactured, used or handled."



MOTORS are built to operate dependably in locations where they are subject to splashing water, oil, or other liquids. They are widely used in exposed outdoor locations, and are completely self-protected against ice, sleet, snow, and rain.



WAGNER TOTALLY-ENCLOSED NON-VENTI-LATED MOTORS may be installed in the locations just described and are built instead of totally-enclosed fan-cooled motors in the smaller ratings because they are less expensive. In the larger ratings they are where the draft produced by the fancooled motor is objectionable.

Write for Bulletin MU-185 or consult the nearest Wagner Branch . . .

ATLANTA 3 . BALTIMORE 18 . BOSTON 15 . BUFFALO 8 . CHICAGO 16 . CINCINNATI 10 CLEVELAND 15 . DALLAS 1 . DENVER 2 . DETROIT 2 . HOUSTON 2 . INDIANAPOLIS 4 . KANSAS CITY 8 . LOS ANGELES 15 . MEMPHIS 3 . MILWAUKEE 2 . MINNEAPOLIS 4 . NEW YORK 7 OMAHA 2 . PHILADELPHIA 8 . PITTSBURGH 13 . PORTLAND 9 . ST. LOUIS 3 . SALT LAKE CITY \$ SAN FRANCISCO 3 · SEATTLE 4 · SYRACUSE 2 · TULSA 3 · WASHINGTON 5

Wagner Electric Corporation

6360 Plymouth Avenue, St. Louis 14, Mo., U. S. A. ELECTRICAL AND AUTOMOTIVE PRODUCTS

M45-16

INDUSTRIAL BRAKES INDUSTRIAL BRAKE CONTROLS NoRoL TACHOGRAPH TRANSFORMERS

MOTORS

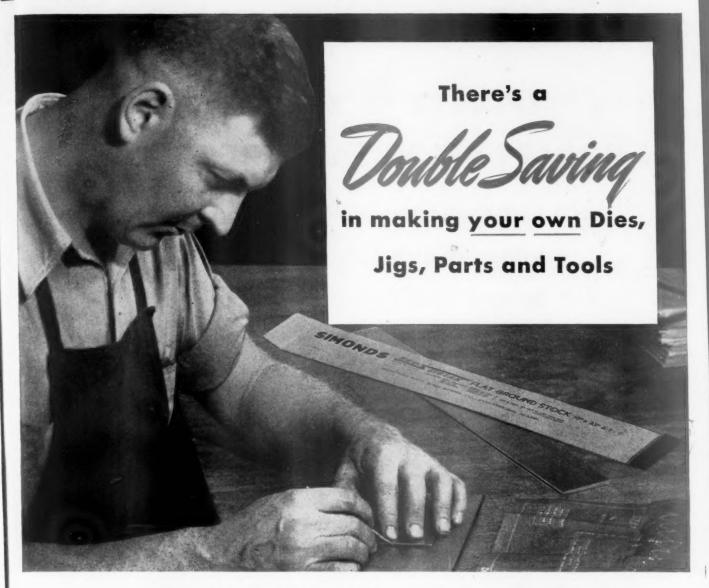
WAGNER PRODUCTS

Other WAGNER PRODUCTS:

AIR BRAKES

BRAKE LINING

HYDRAULIC BRAKES



#### ...with SIMONDS Flat Ground Stock

You save the time of waiting for hard-to-get gages and tools. And you save time again... because you don't have to grind Simonds Flat Ground Stock to size. It's cut to 18" length and accurately ground to standard thicknesses and widths. All edges and ends are mathematically square, and all surfaces are smooth to facilitate layout work.

This stock is Simonds' own special high-carbon

tool steel, uniformly annealed for easy machining and proper oil-hardening. Each piece is packed in its own envelope, plainly marked with size and directions for heat-treatment. "Red-Streak" Flat Ground Stock is made in 121 sizes, with standard sizes usually available from your dealer.

Branch Offices: 1350 Columbia Rd., Boston 27, Mass.

127 S. Green St., Chicago .7, Ill. • 228 First St., San Francisco 5, Calif. • 311 S. W. First Ave., Portland 4, Ore.

31 W. Trent Ave., Spokane 8, Wash • 416 W. Eight

PRODUCTION TOOLS

FOR CUTTING METAL,

WOOD,

PAPER, PLASTICS



## KELLETT 6 STEP PLAN ENABLES MANUFACTURERS TO...

- Cut Design and Production Costs
- Improve Product Quality
- Speed and Expand Output

More than \$30,000,000 worth of metal products have been produced in Kellett plants since 1940, largely for leading American manufacturing organizations for which we are subcontractors. These operations developed the unique facilities now available to other manufacturers at Kellett,

for the solution of any type of technical problem from the design of a marketable product to its production and delivery in quantity.

Any or all of these 6 basic steps in the Kellett Plan are provided in any desired combination for production on prime or sub-contract—

- 1 Engineering Design, under a skilled staff of practical engineers.
- 2 Tool Design and Manufacture, with ample facilities available.
- 3 Photographic Reproduction for loft-template or direct manufacturing application.
- 4 Experimental Manufacture of single-item or pilot models in metal or wood.
- 5 Engineering Testing through mechanical and chemical laboratory evaluation.

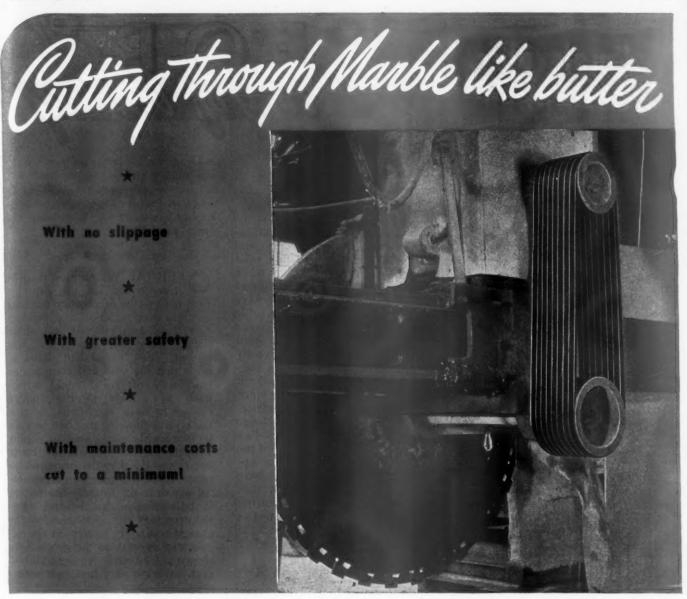
#### And finally, and most important-

6 Metal and Wood Manufacture, specializing in sheet metal and welded steel assemblies.

Not least among the advantages of the Kellett Plan are the economies it assures in design, production and capital expense, through the services of a highly skilled, outside technical and working force. The Kellett staff operates under experienced supervision. Its modern plants are specifically equipped to handle complex engineering and quantity production jobs in metal, wood and other materials.

For detailed information, write to Kellett Aircraft Corporation, Department SC-2, Upper Darby (Philadelphia), Pa. An outline of the general nature of your present or postwar design or production problem would enable us to set forth the possible ways in which Kellett may prove helpful in solving it.





Imagine cutting through marble—or limestone, or sandstone—at the rate of two to four feet a minute! It seems incredible, but this powerful 5-foot saw does it with ease.

For 10 years—since the original drive was discarded because of slippage and breakage—Dayton V-Belts have been providing trouble-free power transmission on this stone cutting job. Slippage has been eliminated. The danger of breakage has been eliminated. And maintenance costs have been reduced to a minimum.

Such highly efficient V-Belt power transmission drives are possible because of Dayton's 40 years of research and technical experience in manufacturing natural and synthetic rubber products. Your Dayton V-Belt Distributor will gladly make

this research, experience, and engineering skill available to you. Take full advantage of his services. Call him today!

THE DAYTON RUBBER MANUFACTURING COMPANY



THE WORLD'S LARGEST MANUFACTURER OF V-BELTS



By momentarily storing the force of a blow and "slowing the punch," the coiled and compressed rawhide in C/R Hammers and Mallets (1st) takes the shattering crash out of powerful blows . . . prevents breaking, disfiguring or marring of products, machines and fine finishes. (2nd) eliminates recoil—ends the fatiguing bounce common to most mallets.

With a C/R Hammer you can use a lighter tool, still strike harder and more effectively; can accomplish more with less fatique; because striking force is mono-directional with more carry through.

WRITE FOR



WHILE credit for participation in the development of the atomic bomb has been liberally distributed among several thousand assorted scientists, technicians and researchers who didn't know what they were developing - and while other thousands of manufacturers who didn't know what they were making suddenly swelled with pride as they realized the import of the mysterious gadgets they had been shipping—we have sought diligently for some slight mention of the purchasing agent who helped to make it possible even though he didn't know what he was purchasing. That recognition turned up in the Chicago Tribune, in a signed article by Roy Gibbons on the atomic project at the University of Chicago, where upwards of 5000 researchers have worked on a round-the-clock shift for some three years, overflowing the existing laboratories and occupying new buildings erected on the tennis courts and a section of Stagg Field. Says Mr. Gibbons:

'The atomic project at the Midway school is so vast that only the university's purchasing agent comprehends its magnitude. His appreciation of its size is gained from knowledge of the requisitions that have passed through his hands for veritable mountains of materials that have been moving into the various laboratories devoted to the undertaking.

So once more, purchasing has played a vital though inconspicuous role in shaping the nation's destiny, for, as always, production begins with procurement. When the final plaudits for this achievement are voiced, add a cheer for Dave Watson, John Pond, and their associates on the University purchasing staff for a big job well done.

THAT erstwhile snappy all-purpose come-back that has served sellers so well for the past five years -"Don't you know there's a war on?"-has now passed into the discard. R. I. P. Unfortunately, it has been superseded by the obvious query by disgruntled buyers, to be delivered with an appropriately sar-castic snarl—"Don't you know the war is over?"

FFICIAL Washington is to be commended for the promptness with which emergency wartime controls over materials and production have been relaxed and abandoned, once the emergency was passed. Few of us had dared to hope that the vast and complicated machinery of WPB could adjust itself so quickly to the sudden change in basic conditions, or that the type of thinking that had become so thoroughly established in coping with the urgencies of wartime could see so clearly that the urgencies of peace demand a prompt and graceful withdrawal. Equally heartening is the revelation that, by and large, industry was well prepared for the change and ready to step on the accelerator as soon as the green light showed. Of course we have all had faith in democracy and free enterprise, but these developments add new confidence to that faith.

ET'S recognize, too, that OPA still has a big job on its hands. The emergency of inflation is not yet over, and it won't be over until supply catches up with demand. The price agency is currently slated to fold up next June -- provided that natural economic factors are reasonably in balance by that time. They should be. Meanwhile OPA continues in its role of the villain of the piece — without whom there might be no show. Industry's surest way of extending this control is by way of artificial shortages and inflationary price policies.

T has been our contention that a good many of the lessons we have learned from wartime purchasing will have a permanent place in procurement policy and technique. A bit of corroborative evidence comes 1e

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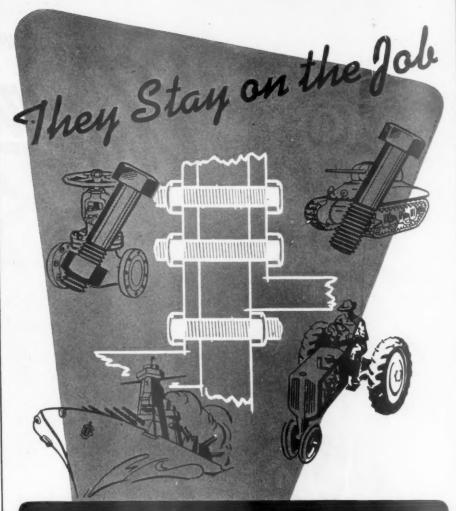
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from Providence, R. I., where State P. A. Franklyn Adams is busy getting an \$800,000 public works program under way. It was a revolutionary step in governmenta! purchasing when Federal procurement agencies discarded the method of general advertising of bids and turned to the method of negotiation with selected suppliers; and the system has been slow in filtering down to state and local governmental lev-But Buyer Adams, with the approval of Governor McGrath, has tackled his project in approved business style by inviting offers from thirteen contractors with proved records of competent and satisfactory performance on state work over the past ten years. The astonished local press reported the news of invitation bidding with bold two-column headlines, and the expected squawks from other contractors were duly forthcoming. But Rhode Island has saved a matter of weeks by this process, and will have its road work finished before another winter's ravages increase the bill by an estimated quarter of a million dollars.

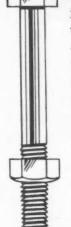
T happens frequently in industrial buying, without publicity, but in the goldfish bowl which is the governmental purchaser's office it makes headlines when the highest bidder lands the order. That's what happened the other week in Omaha, Nebraska, when the county commissioners accepted the recommendation of P. A. Harry Koontz and authorized the purchase of a \$1,523.80 bulldozer against three bids of \$1,-250 for alternative equipment proving again, if additional proof is needed, that Purchasing Agents are really interested in value rather than price.

A'UGUST, 1945, goes down in purchasing history as the alltime high of purchasing in reverse. Terminations and cutbacks on war contracts in the few brief weeks since V-J Day are estimated to total nearly 40 billion dollars on an annual war production rate of 48 billions. Typical of this development is the cutback schedule of the Army Service Forces, responsible for nearly half of all military procurement:

CIIC					
Ordnance					100%
Chemical Warf	aı	re			
Engineers					95%
Signal Corps .					90%
Medical Corps					75%
O					60%



with BOLTS, NUTS AND SCREWS MADE BY GENERAL SCREW MANUFACTURING CO.



Your products are built for performance, to stay on the job, delivering the goods, day in and day out. The products of General Screw are also built to assure performance and endurance. Raw material is carefully selected; threads are accurate, slots true-centered, heads uniform, shanks straight. All the strong, lasting, quick assembly qualities you want are built into General Screw products.

#### **FACILITIES FOR PRODUCTION RUNS**

Your requirements for bolts, cap screws, machine screws and nuts in large quantities can be furnished through our modern facilities for long production runs. You will find it well worth while to investigate our productive capacity to supply your quantity needs. Write today.

ENERAL SCREW
Manufacturing Company
1238 W. Monroe Street, Chicago 7, Ill., U.S.A.



#### CONSTRUCTION . . .

Huge bridges of steel... enormous dams of concrete... great buildings... are put up with the help of indispensable rope. Throughout industry "AMERICAN" ROPE supports

scaffolding and lifts and hauls the material for construction. It is for rugged work like this that "AMERICAN" ROPE is built . . . always made of the best materials available . . . always uniform . . . strong . . . dependable.

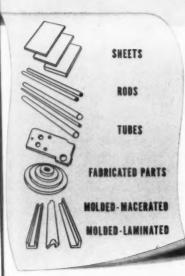
Care Saves Rope . . . A Vital Material

AMERICAN MANUFACTURING COMPANY, BROOKLYN 22, N. Y. - ROPE - TWINE - PACKING - OAKUM
Branch Factory: ST. LOUIS CORDAGE MILLS, ST. LOUIS 4, MO.

Soles Offices: BALTIMORE . BOSTON . CHICAGO . HOUSTON . NEW ORLEANS . PHILADELPHIA



#### Using Corrosion Resistance, Strength, and Machinability



MOVIE FILM carriers are an excellent example of using plastics where plastics belong.

The film carrier illustrated is only one of many types made from Synthane laminated plastics. Synthane is well-suited for the job because it stoutly resists the corrosive action of developing solutions.

The teeth, though small, must be strong and accurately indexed. They are easily milled from Synthane. If you have any application for which laminated plastics seem to be indicated, let us know about it—before you design, if possible.

Our development engineers want to helpyou fit the job for plastics and fit the plastics for the job. Design, materials and production should be eyed as one problem if performance and costs are to be satisfactory. Synthane's help includes design, selection of the right material, and fabrication by men who know plastics.

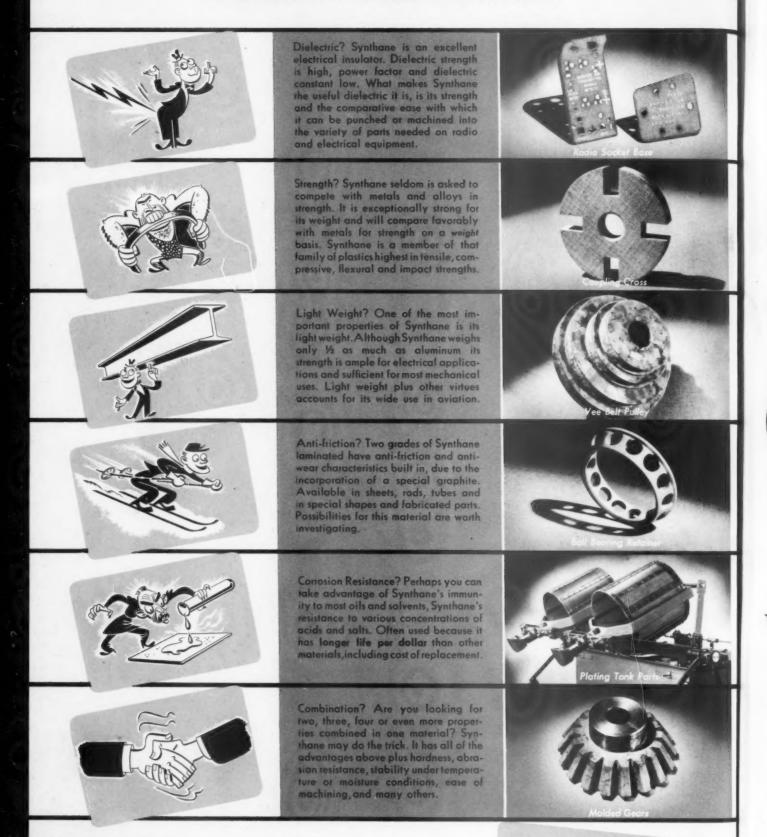
SYNTHANE TECHNICAL PLASTICS · DESIGN · MATERIALS · FABRICATION



MU

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### What'll You Have!



#### SYNTHANE CORPORATION, OAKS, PENNA.

Representatives in all principal cities

Plan your present and future products with Synthane Technical Plastics • Sheets Rods • Tubes • Fabricated Parts • Molded-laminated • Molded-macerated





VICTORY REVEALS A MYSTERY

More than two years ago, an engineer of the Laboratories visited U.S.S. Boise, returned with a mysterious box which went into the Laboratories' vault. Now, victory opens the box and discloses a special kind of electron tube called a magnetron. It was part of a Radar which furnished data to aim U.S.S. Boise's guns during the night action off Savo Island on October 11-12, 1942. Because of the high frequency generated by this magnetron, the Radar was not detected by the enemy and the action was a complete surprise. Six Japanese warships were sent to the bottom of the sea.

This magnetron is a symbol of the Laboratories' enormous war program. Half of it was devoted

to Radar, the other half gave birth to radio transmitters and receivers, sonar apparatus for the Navy, loudspeaker systems for ships and beach-heads, fire-control apparatus for anti-aircraft artillery. Coming months will unfold the story of these and many other contributions of the Laboratories to the victory of our

Bell Telephone Laboratories' war work began before the war; until now, it claimed practically all our attention. With victory, we will go back to our regular job—helping to bring you the world's finest telephone service.

BELL TELEPHONE LABORATORIES



Exploring and inventing, devising and perfecting, for continued improvements and economies in telephone service.

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## How 2+4=64% or More in Tape Cost Savings

If you are a substantial user of industrial tape, wouldn't you be delighted to achieve handsome savings in material and manpower cost through one or more of the following four conservation methods:

- 1. Use of a tape which is more efficient than one now in use, but which costs no more.
- 2. Use of a tape just as efficient as one now in use, but costing less.
- 3. Use of narrower width of tape which is nevertheless just as efficient as one now used.
- 4. Use of shorter pieces of tape than now used, but long enough to do the job just as efficiently.

#### Here Are the 2 Reasons Why

Bauer & Black technicians have been saving firms as high as 73% in tape costs alone . . . and through the four conservation principles just named.

- 1. Bauer & Black Cloth Industrial Tapes cost less than most other industrial tapes.
- 2. Bauer & Black Cloth Industrial Tapes have greater tensile strength than many other industrial tapes.

HERE'S JUST ONE EXAMPLE: In a large Detroit industrial plant two strips of 1-inch paper tape were being used with an overlap to protect gas tank doors. They were replaced with a Bauer & Black Cloth Industrial Tape only 1¼ inches wide, and because of its greater tensile strength requiring only one strip. Result—savings in tape cost of 64%.

Altogether, eight applications of tape were made in this one plant with substantial savings not only in tape cost but also in manpower cost.

#### Why Not Check Your Own Tape Use?

Bauer & Black technicians will be glad to call and study your tape problems with your engineers. There isn't the slightest obligation. Write today to Dept. 210 and tell us when to call. This free service may disclose a number of ways to save money and increase operational efficiency.

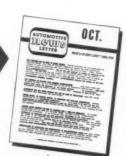


# BAUER & BLACK

Industrial Tape

#### Send for Bauer & Black Automotive News Letter

This timely new service will keep you informed on latest developments, trends and ideas in the automotive industry . . facts which vitally affect your business. Here, in easy-to-read, timesaving form, you get the highlights of the month's news and forecasts! Send your name and address today. It's free and there is no obligation.





A product of

#### BAUER & BLACK

Division of The Kendall Company

2500 SOUTH DEARBORN ST., CHICAGO 16, ILLINOIS

IMPROVE METHODS . . .
PRODUCTION SHORT CUTS
TO REDUCE COSTS

## GRADE

It takes all of 23 letters of the alphabet to designate all the grades of hardness which are available in Borolon and Electrolon Grinding Wheels. But, this wide range of grades from "very soft" to "very hard" is necessary to enable Abrasive Company to meet the very diversified requirements of industry for grinding every type of material on every kind of machine, at varying speeds, for every type of grinding from snagging to fine finishing.

For such minute gradations made in thousands of combinations of different abrasive types, grain sizes and structures, intricate control of processes is required. The highest ceramic and engineering skill with unending tests and inspections are essential. Job performance and increasing industrial preference for Borolon (aluminum oxide) and Electrolon (silicon carbide) wheels and other abrasive products are forceful testimony of Abrasive Company quality.

Abrasive Company Distributors can supply from diversified stocks just the right wheels for your selective service requirements.







The correct grade of hardness in every Borolon and Electrolon Grinding Wheel is assured by various check tests with special equipment.

ABRASIVE COMPANY, PHILADELPHIA . DISTRIBUTORS IN ALL PRINCIPAL CITIES



#### DAMAGE EXPELLER!

While using slotted screws, work-spoiling driver skids were causing frequent damage to plastic shades in the assembly of desk lamps. Refinishing slowed down production, and spoilage boosted costs...until the ma turer started using Phillips Recessed Head Screws. until the manufac-



#### PROBLEM DISPELLER!

Phillips Recessed Head Screws, engineered to take heavier driving pressures, simplify product design, give it more strength, more rigidity...often with the use of fewer screws. Screw-driving is faster, easier, surer...permits design innovations slotted screws just can't touch.



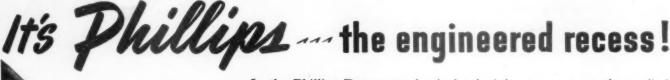
#### OUTPUT IMPELLER!

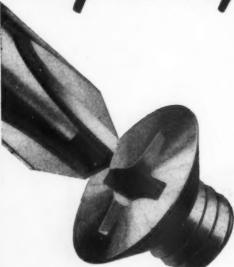
With the change to Phillips Screws, damage and delays were eliminated. And with no more worry about driver skids, power drivers could be used, speeding output fur-Costs came tumbling down...production set new ther. records.



#### SALES PROPELLER!

The Phillips Recessed Head radiates quality. It's trimmer ... smarter looking ... modern as tomorrow. No unsightly burrs and uneven appearance to cool off interested prospects. Put the extra sales push of Phillips Screws behind your product ... make good merchandise look better!





In the Phillips Recess, mechanical principles are so correctly applied that every angle, plane, and dimension contributes fully to screw-driving efficiency.

It's the exact pitch of the angles that eliminates driver skids.

. It's the engineered design of the 16 planes that makes it easy to apply full turning power - without reaming.

... It's the "just-right" depth of recess that enables Phillips Screw Heads to take heaviest driving pressures.

With such precise engineering, is it any wonder that Phillips Screws speed driving as much as 50% - cut costs correspondingly?

To give workers a chance to do their best, give them faster, easierdriving Phillips Recessed Head Screws. Plan Phillips Screws into your product now.

SCREWS . MACHINE SCREWS . SELF-TAPPING SCREWS . STOVE BOLTS 

American Screw Co., Providence, R. I.
Atlantic Screw Works, Hartford, Conn.
The Bristol Co., Waterbury, Conn.
Central Screw Co., Chicago, III.
Chandler Products Corp., Cleveland, Ohle
Continental Screw Co., New Bedford, Mass.
The Corbin Screw Corp., New Britain, Conn.
General Screw Mfg. Co., Chicago, III.

. .

> The H. M. Harper Co., Chicago, III.
> International Screw Co., Detroit, Mich.
> The Lamson & Sessions Co., Cleveland, Ohio
> Manufacturers Screw Products, Chicago, III.
> Milford Rivet and Machine Co., Milford, Conn.
> The National Screw & Mfg. Co., Cleveland, Ohio New England Screw Co., Keene, N. H. Parker-Kalen Corp., New York, N. Y. Pawtucket Screw Co., Pawtucket, R. I.

Pheoli Manufacturing Co., Chicago, III. Reading Screw Co., Norristown, Pa. Russell Burdsall & Ward Bolt & Nut Co., Port Chester, N. Y. Russell Burdsail & Ward Bolt & Nut Co., Port Chester, N. Y. Scovill Manufacturing Co., Waterville, Conn. Shakeproof Inc., Chicago, Ill. The Southington Hardware Mfg. Co., Southington, Conn. The Steel Company of Canada Ltd., Hamilton, Canada Wolverine Bolt Co., Detroit, Mich. 0

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## The Gunsmith and the Lady

Once a great artist left his easel to plan the arsenals and siege guns of a mighty war. The man was Leonardo da Vinci—many-sided genius of the Middle Ages. His name will never die. His work lives on—but not in guns and things of battle. It lives in the smile of a lovely lady, the Mona Lisa of the Louvre.

Over and over in our world's history the arts of peace have been abandoned to make way for the crafts of war. Something like this has happened to us in America. To soldiers, to civilians and also to Olin Industries. Like everyone else, we've had to lay aside the job of peace to speed the hour of victory and hurry the day when we can all go back to mak-

ing things that folks can enjoy in security and peace.

All that Olin chemists, engineers, metallurgists and technicians have learned in peacetime... and in wartime will go into the hopper. Out will come many things—roller skates for children; guns and ammunition for sportsmen; flashlights and batteries for everyone; brass, bronze and other alloy metals needed by countless manufacturers to make the myriad commodities that help make living in America pleasant and profitable.

That's what we dream of. It's

a hope we share with all America, and it's bound to come true.

OLIN INDUSTRIES, INC.

East Alton, Illinois



Divisions, Subsidiaries, Affiliates

WINCHESTER REPEATING ARMS COMPANY • WESTERN CARTRIDGE COMPANY • WESTERN BRASS MILLS • BOND ELECTRIC CORPORATION • WESTERN POWDER MANUFACTURING COMPANY • GOVERNMENT OWNED OLIN OPERATED TACOMA ALUMINUM DIVISION • UNITED STATES CARTRIDGE COMPANY (OPERATING ST. LOUIS ORDNANCE PLANT) • LIBERTY POWDER COMPANY • EQUITABLE POWDER MANUFACTURING COMPANY • COLUMBIA POWDER COMPANY • EGYPTIAN POWDER COMPANY • TEXAS POWDER COMPANY.

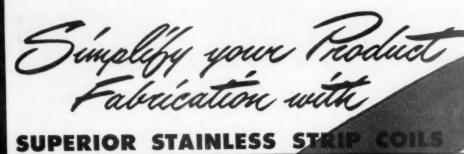
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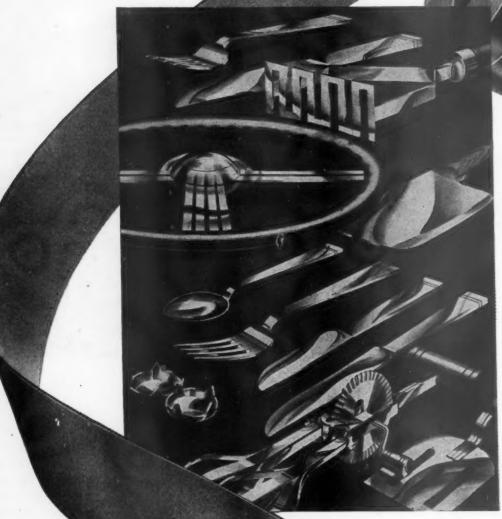
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All the Inherent Advantages of Stainless Steel... High Strength, Permanent Beauty, Maximum Corrosion Resistance ... Easy to Clean and Keep Clean.

Superior Steel

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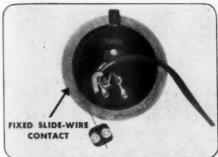


New Descriptive **Bulletin Available** on Request



### THINGS TO LOOK FOR

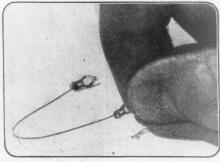
## in choosing Controlling Pyrometers



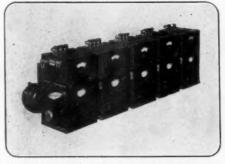
1. Fixed Slide-Wire Contact. Setting the dial places the slide wire contact at the desired value, where it remains, so that the galvamometer deflection represents temperature deviation from the control point. Detection for control purposes can be applied directly to the galvamometer.



2. Knife-edge Selectivity. The slightest galvanometer deflection is instantly "sensed" and translated into corrective action by Foxboro's "Knife-edge" detecting mechanism. Selectivity is positively determined by engagement or nonengagement of the depressor and the pointer.



3 Non-Breaking Galvanometer Suspensions. Foxboro galvanometer suspensions do not break. The patented mounting is scientifically designed to distribute tension correctly, eliminating shear strain, and the acid proof gold alloy strips are longer, heavier, and stronger.



4. Group Drive. Unlike any other pyrometers, Foxboro Potentiometer Controllers are designed for group driving, so that a single motor unit can operate up to 5 instruments. Initial cost, power, spare parts inventory and maintenance are saved.



5. Easy, Accurate Setting. A super-size scale, 11 inches long, enables unusually accurate settings of the Foxboro Potentiometer Controller. Every graduation represents a temperature value of less than one per cent of scale range.



6. Only Three Moving Parts. Some models have only three moving parts and none have more than half a dozen, all designed to operate at slow speeds. Foxboro design engineering produces close control with simple mechanism.

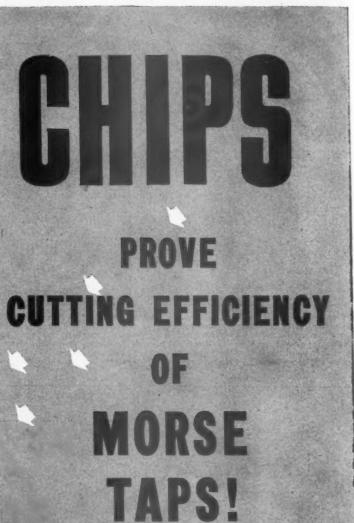
You're taking the shortest cut to higher accuracy and sensitivity in pyrometers...plus utmost uniformity, dependability and maintenance-freedom in your heat-treating installations... when you select instruments with all six of the big advantages described above. Foxboro Potentiometer Controllers alone give you all these important features.

Bulletin 202-6 will give you complete details about these better-engineered pyrometers. Write The Foxboro Company, 178 Neponset Avenue, Foxboro, Mass., U. S. A. Also Montreal, Canada. Branches in principal cities.



FOXBORO

ORO POTENTIOMETER INSTRUMENTS





MORSE two-fluted, spiral-pointed hand taps roll the chips ahead to prove cutting ease, speed and precision as they thread deep open-end holes. These taps effect measurable gains in quality and quantity production.

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## IT SHOULDN'T HAPPEN TO A DOG BISCUIT!

## it can't happen to any product when ball bearings are Fafnir-sealed



There's no such thing as "just a little oil" when it creeps into and onto such products as paper, textiles, foods or leather goods. Any oil is too much oil.

That's where Fasnir has done some of its greatest pioneering...in the development of several types of

grease-retaining seals for all types of ball bearings.

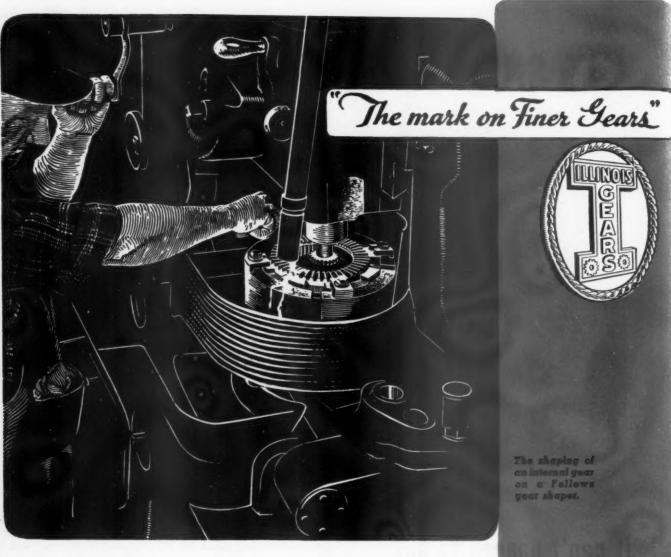
For instance, the Fafnir Mechani-Seal, a precision fitted system of interlocking steel plates which actually trap any lubricant that may possibly escape from the bearing.

And the Fafnir Plya-Seal which utilizes the natural flattening out tendency of synthetic rubber to make a self-adjusting washer. It's always grease-tight. It's removable for inspection and servicing. And it's revolutionizing: in many sizes it makes possible a sealed bearing no wider than standard unsealed bearings.

Why pay the high costs of oil spoilage when it costs so little to replace old-fashioned oil-leaking, oil-dripping plain bearings? Let a Fafnir engineer show you how it can be done. The Fafnir Bearing Company, New Britain, Conn.

MOST COMPLETE LINE IN AMERICA

FAFNIR BEARINGS



### We Are Never Too Busy To Be Helpful

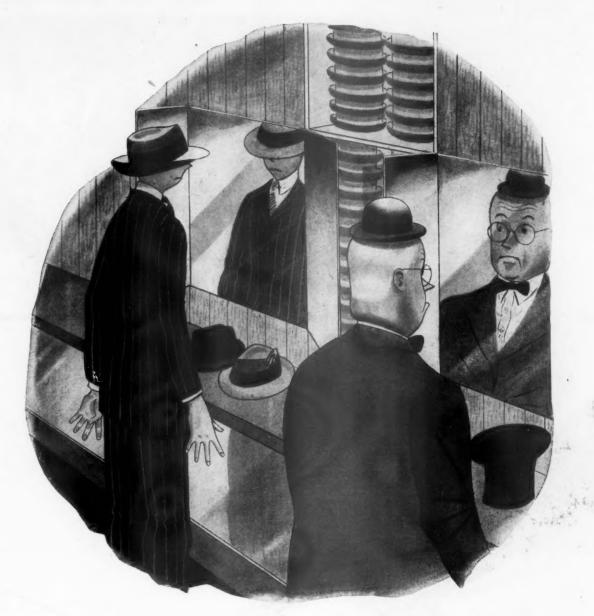
War or peace, we take time to analyze problems that our customers bring to us pertaining to the transmission of power and the application of cut gears. Often we make helpful suggestions for re-arranging a gear train to conserve space or to use fewer gears. Whether it is a single gear for a mine shafthead or hundreds of gears for a builder of complicated machines, we are equally interested in the user receiving the gears that are most suitable for the job at hand.

Too, we are vitally interested in the maximum performance of every gear we make. That is why they must come up to the "Five Star" standard we've set for ourselves: \* Material is double-checked, \* All cutting done by skilled craftsmen, \* Required accuracy has been inbuilt, \* Every gear is double-inspected after completion, \* Delivery is as promised.

Wherever you are, you can acquaint yourself better with our serviceful organization by sending for a copy of Catalog 39 — our service is nationwide.

ILLINOIS GEAR & MACHINE CO. Chicago (35), Ill.

ILLINOIS GEAR & MACHINE COMPANY



### "Do you have lid trouble?"

Of all people, it shouldn't happen to canners. That's why we take such pains to see that every item in the manufacture of Crown cans is just right for your most efficient operation.

When you use Crown cans, you are sure of getting the correct type of plate... the proper coating for your particular job. You likewise know that the end seams have been given

a liberal flow of compound... that there are neither cracks nor perforations in the ends. And since proper sealing of the ends calls for precisely functioning closing machines, we assure you Crown's equipment for this purpose is the finest made.



What can you count on in a lamp?



## Westinghouse

MAZDA LAMPS FOR SEE-ABILITY



TAKE THESE LAMPS—fluorescent lamps by Westinghouse. What is there about them that makes them so bright, so long lasting? Westinghouse research . . . electrical "know-how" . . . precision manufacturing experience.

HOLD A FLUORESCENT lamp in your hand—this Westinghouse fluorescent—and it may seem about the same as any other fluorescent. But just put it in a fixture. Then, when you've seen it glowing uniformly bright from end to end, from week to week, month to month . . . why then you'll know what you can count on in a lamp—provided you look for the name Westinghouse on every fluorescent lamp you use!

WESTINGHOUSE PRESENTS John Charles Thomas, Sunday 2:30 P. M., E.W.T., N.B.C.

Tune in Ted Malone, Monday through Friday 11:45 A.M., E.W.T., Blue Network.

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In Gem Culling the most precious stones are entrusted only to craftsmen of long proven, trustworthy skill.

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\* Offices: 270 Madison Avenue, New York 16; 3641 So. Washtenaw Avenue, Chicago 32; 735 Battery Street, San Francisco 11, and other principal cities. In Canada: Meredith, Simmons & Co., Ltd., Toronto and Montreal. In England: National Adhesives Ltd., Slough, Bucks.



## Purchasing Previews

A Washington Report. for Purchasing Agents

OCTOBER 1, 1945

NO TROUBLE IN MATERIALS OR COMPONENTS SOON . . .

In selling the program of quick release of controls over industry, War Production Board officials are assuring purchasing agents that even though some materials or components may be temporarily short, both will be there by the

time industry is ready to reach for them.

In other words, it is not possible to provide materials for work in process, in inventory, and in transit without some show of shortages. Premise is that if buyers purchase what they need on a current basis-and bank on the proven ability of industry to produce their future needs, in lieu of an actual inventory -- there will be enough to go around.

Alarmist groups have consistently raised the problem that large users of materials will pick the market bare of supplies at the expense of smaller consumers. The automotive industry has been pointed out as a major threat to available

supplies of sheet steel.

War Production Board estimates that production of steel will exceed all possible demands, and will, in effect, assure all buyers an easy access to supplies.

WHO WILL TAKE THE RAP ON PRICES?

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Office of Price Administration is proceeding with its pricing program based on bringing consumer products back on the market at, or around 1942 prices.

The two factors that bolster this policy are:

1. Take home wages have been cut considerably through the return to a normal work week. Any large increase in prices would bring strong pressure for much higher basic wage rates.

2. The 1942 price levels did not represent the increase in labor costs, material costs and higher overhead which developed during the war. At the same time, the 1942 price levels in many cases contained price packs to compensate for marketing practices which will not be present

in the period immediately ahead.

As an example, automotive price levels in 1942 permitted retail dealers to make higher trade-in allowances than were warranted by the resale value of the used car. For some time to come, all automobiles --- new or used --- can be handled at a profit. The obvious problem is that the price pack in the 1942 pricing pattern was not at the manufacturing level, where the major cost increases have occurred.

This will complicate the OPA burden. To maintain its policy of reestablishing 1942 price levels, the pricing agency will have to allow some increase to manufacturers--but will attempt to squeeze this increase out of the final market price by requiring absorption in the marketing

process.

Disposal of war surplus has now become an immediate problem.

The problem legitimately divides itself into two phases——the first being the disposal of surpluses which are usable, and where the question involved is the policy and technique of disposal.

The second phase concerns by far the largest tonnage of surplus, and covers the huge number of war equipment items which have little or no peacetime use. These items represent the largest dollar expenditure, and the least dollar recovery.

Problem involved in handling this latter type of surplus is how to liquidate as scrap, and at the same time avoid public outcry against waste.

Best example of the latter type of problem is the huge store of airplane engines, the majority of which are of a type and rating as to provide a negligible civilan market.

If these engines are stored and maintained in a standby condition for several years, they will become obsolete even as engines for military aircraft---and at the same time, in addition to being fit then only for scrap, will have accumulated storage charges, transportation in and out of storage, handling and preserving charges that will be an added burden on the public treasury.

Current plan is to offer a considerable lot of these engines open to public bid—and to disclose by this procedure the thinness of the market. This could then be used as a strong argument for immediate scrapping policy, which surplus disposal officials maintain is the only solution.

#### THE LINGERING CONTROLS OVER INDUSTRY . .

During the period immediately ahead, the Government

will seek to crystallize its domestic policy.

There have been indications of the Government's

There have been indications of the Government's policy toward labor --- namely, a spirit of friendly neutrality.

The policy toward industry will be generally one of giving business its head---at the same time of building up a quick potential incursion by Government into job-making projects.

Still to be determined is how the various Government activities affecting industry during wartime will be folded into some peacetime agency.

Secretary of Commerce Henry Wallace will make a determined bid to bring what remains of WPB, Smaller War Plants Corporation and Foreign Economic Administration, under the wing of the Bureau of Foreign and Domestic Commerce.

Office of War Mobilization and Reconversion is extending its policy-making functions, and currently is assuming the position of an overall holding company for all Government agencies which have a reconversion role.

#### SOME INVENTORY CONTROL REMAINS . .

WPB retains its inventory controls on scarce materials, with the obvious realization that as soon as these materials come into adequate supply, inventory limitations become unnecessary.

This means that while an item is short, WPB will seek to prevent hoarding or pre-empting of the market by speculators. The supply picture may improve so rapidly that hoarding or speculation might well be a poor gamble.

The only blind spots on raw materials are tin and crude rubber, and these may well be in fair supply if the Far Eastern sources have not been too badly damaged and the trade disrupted.

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Above: Strapped pallet loads handle easier in and out of cars.

Left: Pallet loads of wire economically braced with Acme Unit-Load Strapping.

# ACME UNIT-LOAD STRAPPING for Pallets and Skids

A pallet, like a skid, is a platform built to support a number of containers or products which, when strapped together, form a *unit load*.

Pallet loading conserves manpower by reducing the number of units handled—in packing, loading, warehousing, and unloading. Pallet loading conserves container and packaging materials; conserves space—in warehouses, freight

cars and ships. Throughout, pallet loading protects against damage.

Acme engineering is cooperating with the Armed Forces in pallet loading, and effecting the same economies for wartime shipping as applied in the past to the movement and handling of peace-time production.

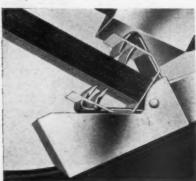
ACME STEEL COMPANY

CHICAGO 8, ILLINOIS, 2842 ARCHER AVENUE

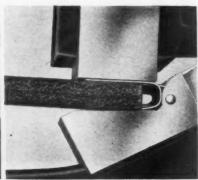
ACME STEEL CO. CHICAGO



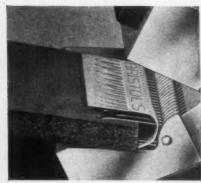
### SEE HOW EASY IT IS TO FASTEN BELTS WITH BRISTOL'S NEW "B-LINE" BELT HOOKS



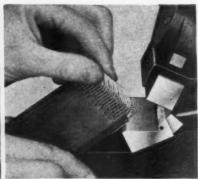
Card lines up hooks with grooves exactly



Hooks are imbedded flush with belt surface



Hooks pierce belt, uniformly spaced



Card lifts off easily after fastening

### Hooks that are Engineered for maximum life at the joint

- 1. Made of a selected alloy steel wire with high wear and tensile strength.
- 2. One leg shorter than the other—each successive hook mounted in reverse to give a staggered joint distributing grip over a greater area.
- 3. Points shaped so as to divert enough force along shank of hook to produce accurate half-circle bend, fitting curvature of pin.
- 4. Uniform spacing in belt distributes pull evenly.



#### ORDER BRISTOL "B-LINE" BELT HOOKS NOW FROM YOUR DISTRIBUTOR

	List Price per Box of 12 12" strips
Size 2 for thin belts over	
small pulleys	\$0.95
Size 3 for thin belts over	
medium pulleys	1.00
Size 4 for belts not over	
1/4" thick	1.00
Size 5 for belts not over	
5/16" thick	1.25
Size 6 for belts not over	
$\frac{3}{8}$ " thick	1.50
*6 12-inch rawhide pins	included



130 BRISTOL ROAD WATERBURY 91, CONN.

#### BRISTOL'S "B-LINE"

Transmission Belt Hooks FAST and TRUE

Also CONVEYOR BELT LACINGS



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THE SCIENTIFIC COMPOUNDED ELASTOMER

A Product of the Synthetic Rubber Division

CHICAGO RAWHIDE MANUFACTURING CO.

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They will be glad to help you.

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care is exercised in making these boots and gaskets. No flaw, however minute, is permitted, and all production

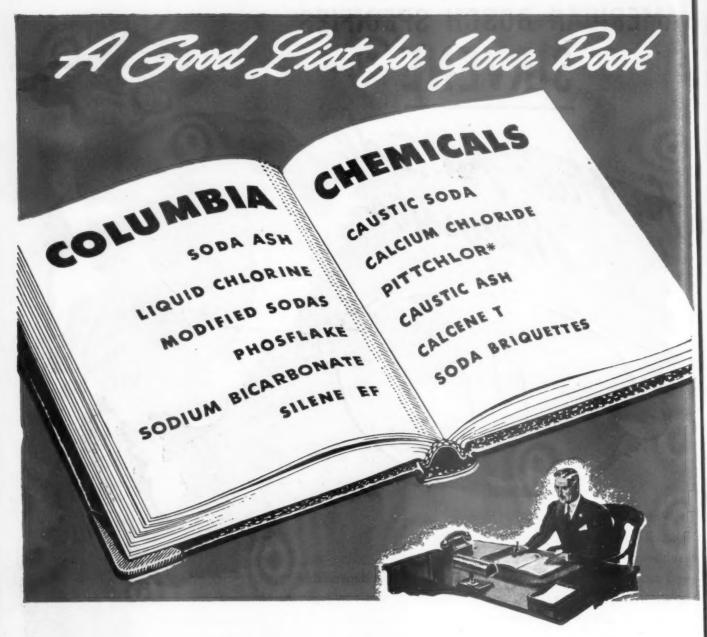
procedures are executed under laboratory-type methods.

problem concerning pliable parts which must operate in exceptional service conditions. You are invited to

call upon Sirvene chemical engineers, whose backlog

All this is worth remembering when you have a

of experience and research is unsurpassed.



Columbia's modern production processes are carefully controlled . . . packaging and shipping are efficiently planned and supervised » Columbia plants are favorably located . . . distribution facilities are organized for excellent service » Columbia policies contribute to enduring business relationships.

That's why Columbia alkalies and related chemical products constitute a "good list for your book."

\*High Test Calcium Hypochlorite



PITTSBURGH PLATE GLASS COMPANY COLUMBIA CHEMICAL DIVISION

GRANT BUILDING . PITTSBURGH 19, PA.

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with a brand-new name

# PITCHLOR

Columbia high-test Calcium Hypochlorite—now known as PITTCHLOR—has seen service on every American front . . . is on duty at hundreds of military camps and posts. Requirements of the Army, Navy and Marines for quick, effective sanitation and water purification will be supplied, but PITTCHLOR now is available for civilian uses, in a new suit of "civvies"—an attractive red, white

and blue 5-lb. re-sealable can, convenient to use.

PITTCHLOR contains over 70% available chlorine, is stable, non-caking and free-flowing, can be used for quick preparation of disinfectant, germicide, deodorant and bleach solutions . . . for the shrink-resistance treatment of woolens.

Distributed through leading jobbers—also furnished in 334-lb. cans and 100-lb. drums.

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GRANT BUILDING, PITTSBURGH 19, PENNSYLVANIA

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COLUMBIA ESSENTIAL INDUSTRIAL CHEMICALS

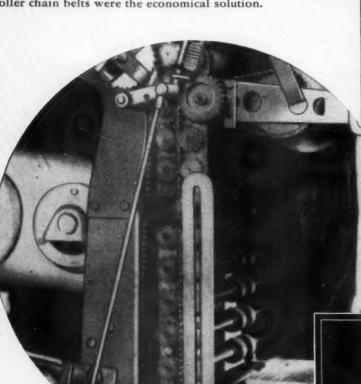
Soda Ash • Counte Soda • Sodium Bicarbonate • Liquid Chlorine • Silene EF (Hydrated Caldum Silicare) • Caldum Chloride • Soda Briquettes

Modified Sodas • Caustic Ash • Phosfiake • Calcene T (Pracipitated Caldum Carbonate) • Pittchlor

#### **HOW TO SOLVE A**

## "FEEDING" PROBLEM!

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## PURCHASING

The National Magazine of Industrial Purchasing

### OCTOBER, 1945

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### DON'T LOSE YOUR SENSE OF BALANCE

TRANSITION from war production to an economy based on civilian products calls for a new balance of economic factors. Our national goals for employment, production, living standards, parity between urban and agricultural groups, competitive positions in export markets, price levels, and all the rest must be brought into practicable equilibrium.

Economic theory teaches us that natural law will cause these various elements to seek and find a new level consistent with the new conditions. Experience teaches us that the new balance attained by such means will inevitably be at the expense of one or more of these goals, setting up human stresses that will surely lead to further unrest and dislocation. If our overall objectives are sound, there must be a compromise of opportunism and self-interest that runs counter to the main purpose. Any other course will mean that we shall "lose the peace".

All-out production is the key to any hope of an economic balance in which all factors may share in the opportunities of the postwar world. The quick release of production controls facilitates the transition and places this critical responsibility squarely on industry's shoulders. It is particularly distressing, therefore, to hear of projected "sellers' strikes" that would nullify this unprecedented opportunity. Granted that there are other sore spots in the present picture, and much need for compromise and adjustment in other fields, we cannot dodge the issue that America must produce to make our system workable.

As a starting point, we have war-built facilities to implement higher production rates and fifty years of technical progress compressed into the past five years. Purchasing agents can help to put these factors to work toward reaching a new economic balance. Pre-war standards are not a proper objective; they are not good enough for the period ahead.

Stuart F. Nemit

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his installation consists of two 24" conveyor belts, each 835 ft. long, running side by side on an incline. They are operating at one of the largest power producing plants in the Middle West. The installation was originally designed for an eight-hour day. Now, on account of the requirements of the war effort, the belts are being operated sixteen hours daily . . . and furthermore, the installation has been stepped up in belt speed about one-third.

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#### A brief summary of outstanding features of timely interest and importance in this issue, to conserve the time of busy readers



New Product Design for postwar markets is a concern of vital current interest in hundreds of companies today. New design means new purchase lists and new procurement problems, but the question really goes deeper than this. By getting into the design process at the start, pur-

chasing can make substantial contributions in the way of developing suitable materials, standardizing parts, enhancing values, and reducing costs. A half dozen examples from recent experience are reported in E. L. Cady's timely article on page 84.

The efficiency and importance of a purchasing department are not always measured by the size of the buying staff. F. M. Burt, on page 92, describes a **Small Purchasing Department** that is doing a big job for its company—a story full of pertinent suggestions for big and little departments alike. Complete with forms and procedures, of course.

With government controls being relaxed in a big way and with surprising speed, the spotlight of public interest and speculation is focused on **Price Control**. No peace has been declared in the war against inflation, and OPA still has a big responsibility. Policies of reconversion pricing and absorption of increased costs will be a decisive factor in meeting new economic conditions. Turn to page 88 for comment on these important topics by our Washington editor.



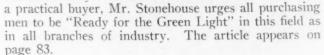
Surplus Disposal continues to loom as the No. 1 headache in balancing the accounts and clearing the decks for adjustment to civilian production, and the solution, already long deferred, must be found and effected quickly to avoid a serious business and industrial dislocation. Keep up to

date on this important situation. The article on page 118 details the present government organization and policy for dealing with the problem.

Cooperative Purchasing in the agricultural field has reached the status of a billion dollar industry, and the idea is rapidly gaining ground in other directions. Is this good business or unfair competition? Is our tax structure discriminating in favor of the farmer? The Illinois Chamber of Commerce is seeking to find an answer to these questions. A comprehensive review of the subject appears on page 129.

Leo T. Parker presents another illuminating series of recent court decisions that show the trend of modern judicial opinion and interpretation on technicalities of **Business Low** affecting purchases. The best legal protection is a knowledge of basic principles that will keep you out of contract litigation. See page 111.

This month's guest editorial is written by Leslie E. J. Stonehouse, N.A.P.A. Vice President for District No. 4. His topic is the critical situation in lumber and the coming **Building Boom** that is expected to play a major role in employment and industrial activity over the next decade. As



New developments in materials and equipment are coming faster and are more important to the purchasing agent today than ever before in our business history. Three outstanding examples are presented in timely and informative articles in this issue. On page 105, George Henry discusses the **Big Four** in the plastics industry. **Shankless Drills**, a wartime device that is now becoming available for general use, are described on page 91. And the **Eight-Way Skid Platform** that is revolutionizing materials handling procedure with its flexibility and spacesaving features, is introduced on page 115.

The Philosophy of Procurement covers a broad range of subject matter vital to the planning and administration of a sound purchasing program. Among the thought-provoking articles in this issue are W. J. Roemer's concept of purchasing as an information center (page 102), Grey Leslie's review of industrial progress (page 128), and Charles Ford's ideas on compensation and profit sharing (page 126).

Don't overlook these monthly departmental features compiled especially for purchasing men—the Washington Letter on page 43, with its timely and authoritative preview of official trends on matters affecting industry, as gathered by our Washington office; the listing of Know-How Information, that is yours for the asking, appearing on page 10; and the illustrated summary of New Products and Ideas that are now available for the industrial buyer (page 116), providing a quick and convenient means of keeping up to date on recent developments.

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RYERSON STEEL

# Ready For The Green Light.

S this is being written, the na-A tion's lumber industry is preparing to feel its way back to normal methods of doing business. Many of the war orders have been cancelled; some of them have been With the ending of the retained. Japanese war, the saw mills' phones have been busy with requests from lumber buyers who have long been awaiting material. Lifting of the distribution controls by cancellation of directive orders, has opened the door for retail buyers to flood the lumber market with orders. Manufacturers, however, are busy re-arranging their order files, and until such time as they can be assured that further military order cancellations are not to be reinstated, they are moving slowly and are not making any rash promises.

Forest products have been among our most critical materials during the war period. The lumber shortage, as everyone knows, has been caused chiefly by two factors—government buying and lack of manpower. The labor situation in the lumber industry is still most critical, and how soon manpower suitable for all-out efficiency of operation will return to the woods and mills will decide how soon the flow of lumber can be diverted into the home building industry.

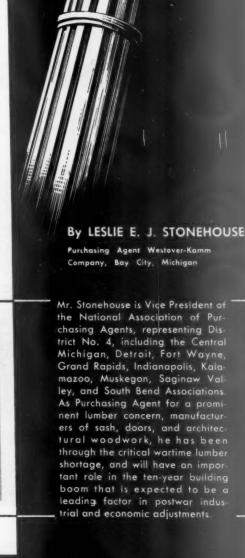
Industrial construction has already been freed from restrictive orders, but it is the opinion of many that in order to provide the maximum number of jobs, home building will have to be greatly increased. That's a double-barrelled factor in our readjustment. For not only is the construction industry a big job-provider on its own account, but

what good are jobs of any sort if the workers have no place to live?

The F. W. Dodge Corporation reports that an average of \$13,685,000,000 for the next ten years will be spent in construction, and the industry is only awaiting release of materials to start this building boom.

Unlike many other war industries, the lumber industry and most of the other building industries need no reconversion of producing units. For this reason there is a great opportunity here for speedy reconversion to civilian uses. The mills and factories are ready to cut civilian products on an hour's notice.

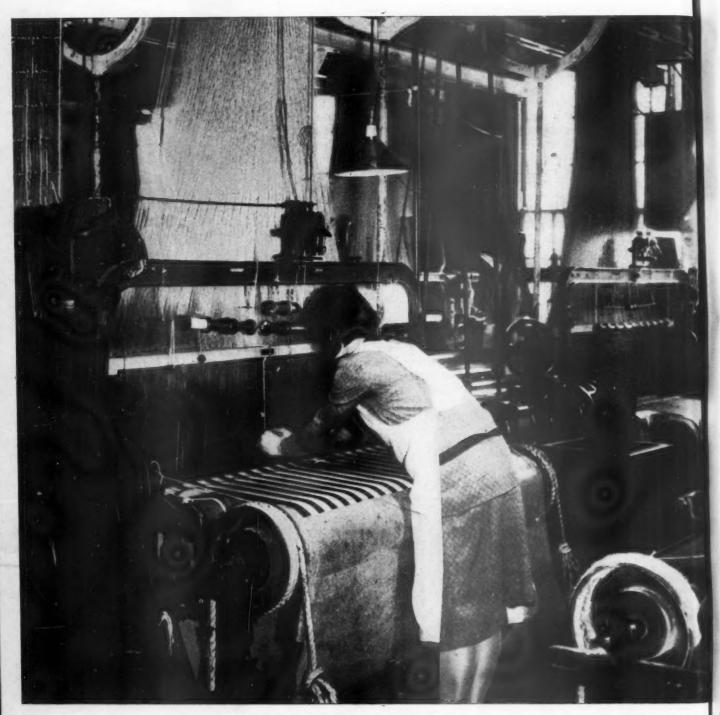
Today the buyer in the retail lumber business is watching every turn of the economic wheel to see what is happening. Changes are coming—fast and furious. If we are to be successful in the switch from wartime regulation to unprecedented peacetime activity, we must watch every opportunity to invest our wits and our energies in a sound and worth-while fashion.







# How Purchasing Functions in Product Design



A constant search for materials that contribute to lower product costs, greater manufacturing efficiency, superior performance, modern styling, and consumer acceptance, is part of the purchasing agent's responsibility

#### By E. L. CADY

W HILE looking at the samples of sheet plastics stock offered by a salesman, the Purchasing Agent of an optical goods manufacturing company happened to see a sheet of pinkish colored material which had not been offered to him. The pinkish material had been developed especially for a purpose which requires entirely different physical characteristics than spectacle frames. Nevertheless the Purchasing Agent asked for—and received—permission to cut from the sheet enough material to make up a few frames.

Behind this action was a lively "style sense" which the Purchasing Agent had spent years developing. Eye-glasses are a style product,

as anyone who had watched the transition from the old steel rims with tiny lenses to the models of today can testify. In fact, the styles are so pronounced that most consumers pay one price for the lenses and another for the frames so as to get exactly the style they want. And many consumers buy new glasses, not because they need a new lens prescription, but to get a new style.

The Purchasing Agent of this company receives a constant flow of style information from his own product design department and from his marketing department. From his comptroller come carefully organized statistics on the numbers of pairs of glasses of a given style or "family of styles" which are likely to be sold.

All of this is very useful for knowing how much of a material to buy,

 Improved designs of textile machinery must combat inertia and tradition among users.



Suppliers of component parts can help in the refinement of design.

how much to keep in stock, and how far ahead to place purchase contracts on a blanket order basis. But there is a certain "sixth sense" or "artistic sense", a feeling for the human factors which underlie the consumer demand for a style, which is useful to the Purchasing Agent of any company which makes style goods. With it he can select new materials which will enable his company to increase consumer demand and volume of business.

If any of the frames of various contours cut from the sample sheet should prove acceptable to the company's style committee, a chain of events requiring further actions by the Purchasing Agent would be set The company's mainto motion. terials laboratory, for example, would test the material for work The material would hardening. have to be bent many times during its fabrication; retailers of spectacles bend various parts of the frames when installing the lenses and bend other parts when fitting to the customers; wearers themselves do some additional bending. The material must not harden too much under this treatment, must not become brittle.

Troubles developing in this laboratory would be taken up by the Purchasing Agent with the maker of the material. At the same time, requests might be made for slight modifications in color, in degrees of transparency and transluscence, in the patterns with which "random" color markings run through the stock.

With all this ironed out, sample production lots would be ordered. These would go to the production testing department—a small or pilot production plant reserved for the solving of production problems. Here it might be found that slight modifications of ordinary main production line procedure would be needed for this material. The Purchasing Agent would take these up with the materials maker. Perhaps a further modification of the stock would reduce the production cost.

Actual frames from the pilot plant would go out into the field. Some would be in the salesmen's kits, some would be placed on the shelves of friendly retailers to find out how well consumers liked them. From these marketing experiments might come farther demands for changes in the stock. The successful material would become a standard purchase and production item.

In the meantime, the Purchasing Agent would be on the look out for other new materials. One might be a new clad precious metal which would permit the lowering of consumer prices on some items, another a material so superior for stamping and for silver soldering that it would

permit the releasing of style designs which had been held back for lack of materials that could be properly

fabricated into them.

The style sense so necessary to the selling end of the company's business thus is matched by style sense on the purchasing end, and the whole company works together to give the consumer what he (or more usually, she) wants.

#### From the Bread Board Up

A far more complex operation involving much larger sums of money is that of a manufacturer of portable radios.

Here the experimental model of each new radio is placed, if not literally on the Purchasing Agent's desk, then in a spot where he has free

and ready access to it.

This model usually has been built from a bread board up, and the bread board still is its base, holding its parts in alignment. Its parts are hand soldered, its members fastened together by any convenient means. It has no real form, no styled shape. Beside it are artist's style drawings showing what the finished job is to look like. And with the drawings are schematic draftsman's sketches showing each part with its mechanical or electrical functions and requirements.

The job may be intended to retail for \$30.00. In its present state of development, even if redesigned for economical manufacturing, it would cost more than \$60.00 to make. But that fact bothers no one. The boiling down process is

about to begin.

The Purchasing Department has, of course, been familiar with every step in the development of the projected new model. The bread board job with its drawings and lists of materials does not arrive as a total

stranger.

The attacks on the costs begin. The Purchasing Department searches the market for materials and for parts-making contractors who can take off a few pennies here, a few dimes there. Plastics fabricators, die casters, stamping producers, the makers of finishing materials, are called in. In a few carefully selected cases their engineers are allowed to see the bread board job. and are invited to make suggestions.

Production equipment makers are consulted also. A nut can be set more rapidly than the company's production engineers had anticipated in one place, a brand new type of speed fastener used in another, a tiny set screw moved to a position more convenient for highest speed installation.

All such data are given to the company's design and production men. These engineers get new ideas. Conference after conference is held with them. The Purchasing Department goes back to the market for more data, and still more.

Three or four secondary models are evolved. One may use die castings for a certain part of the chassis, another plastics, a third stampings. There are tests, comparisons, refine-

ments.

With these, the boiling down process starts all over again. In the end a model evolves which can be made to sell at the intended price, and which actually is a much better radio than the original bread board job with all of its high cost materials.

Production begins. But this does not complete the story.

The Purchasing Department has

(or perhaps all three) may happen. The company may reduce the retail price, thus stepping up the production volume and permitting further savings. The savings may be put into additional gadgets which will provide a better radio for the same retail price. Or a range of models may be brought out, some selling at less than \$30.00 and some at that price or higher, but all based on the original model and using as many of its latest parts and production tools as possible.

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In any of these cases the Purchasing Department is back in the market, searching and developing.

#### Let the Suppliers Think

The Purchasing Agent of a manufacturer of small apparatus for fire fighting and for other uses. watches very carefully for suppliers who seem to have worth-while product development departments. And when he finds one, he is likely to



Food processing equipment must be built to exacting standards of performance.

been familiar with that model from the first selecting of the bread board. It knows every part, why that part is there and what the ideal performance would be, as only a set of men who have worked for weeks on the development could know.

The parts and materials suppliers keep on working out new and less costly materials and methods. The company engineers work out still others. The Purchasing Department keeps on searching, keeps on thinking. The costs go down.

At this point any of three things

send that house some of his apparatus to work on.

Let a gear manufacturer, for example, convince him that he can supply more smoothly operating gears, and he may send it a completely assembled machine with instructions to take the original gears out, install its own, and ship the machine back for test.

The gear manufacturer is likely to do more than merely install gears. He may suggest a better class of bearings alignment, a lubrication system that will be more favorable

to the gears, a type of gear assembly that will be easier to remove and replace when repairs must be made upon the equipment in the

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Here are topics to be discussed with the production department, the makers of lubricants and lubrication systems, the repair and field service department, the product designers, and the bearings makers. New ideas come from all of these sources. The Purchasing Agent then finds himself with several lines of further investigation to follow.

This purchasing policy has been followed consistently for more than twenty years. As one result (and of a generally progressive attitude and "modern mindedness" in the company) the company has the reputation of being one of the new product development leaders in several fields, and also of always selling well made equipment at reasonable As another result, any is freedom from repair and maintenance bills. The company wants each machine to be so profitable to the customer that he will be able and eager to buy others which serve different purposes.

On brand new designs the Purchasing Agent functions much like the one in the radio manufacturing company mentioned above, the difference being that whereas a new radio may be developed and brought to the production point in a few months, a new foods machine may take years and give the Purchasing Agent more time accordingly. The parts and sub-assembly makers, then, have time to study the performance requirements of their products.

Having made these studies, they are asked for guarantees. guarantees are not in the form of bonds or of legal contracts, but are written statements of opinion as to how long the products should be expected to last under the conditions to be met.

Working out these guarantees requires unusually intimate and thorough contact between the Purchasing Agent and the engineers of the supplying companies. From this many new ideas are developed.

Once the new machines get out into the hands of the users, unexpected troubles are likely to develop. The Purchasing Agent then goes back to the suppliers' engineers. In the light of the knowledge that each has developed regarding the other's problems and requiremts, new solutions are worked out.

Some suppliers prefer to take back the products which failed, allowing the purchasing company either full or partial credit. In other cases the parts are so special in design that this is impractical. But the suppliers know that the company will replace free of charge any parts which fail for reasons other than those of flagrant abuse, and will even replace the abused ones if it feels that such abuse should have been anticipated. And most suppliers like to support their full shares in this policy.

The parts and sub assemblies thus are developed and redeveloped. with the Purchasing Agent working constantly with the suppliers. Once a machine is at a satisfactory stage, the company is likely to standardize its parts and their suppliers and to leave it alone for several years. But

(Continued on page 364)



Each radio model is the product of evolution and purchasing research.

manufacturer having anything new and better to offer is likely to head directly for this Purchasing Agent's door.

#### A Question of Guarantees

A maker of foods processing equipment spends a great deal of money on original product designs, maintains a heavily protected patent position, charges the highest prices in its field for its products, but intends those products to pay for themselves by superior performance. Part of that superior performance

Style factors are important in the design and materials for spectacle frames.





By A. N. WECKSLER

OFFICE of Price Administration officials are anticipating for the immediate future some weakening in the price structure, but claim this will be only temporary and warn that inflationary threats are as real now as during any time in the war period.

To point up this position, OPA recounts the experience following World War I. Immediately after that war, there was a slight slump in prices, but this was followed by an inventory boom which shot prices and costs into an upward spiral. The inflated price structure began to collapse in May of 1920. Factory payrolls fell 44%; form income dropped 66%. Inventory losses totaled \$11,000,000,000, and the reserves which had been accumulated by industry during the war were wiped out.

To avoid the short-lived inflationary boom and subsequent drop which followed the first World War, OPA will seek to maintain price controls on as many items as threaten to boost the cost of living. Primary emphasis will be placed on bringing consumer durable goods

back on the market at close to 1942 price levels.

This means not only continuation of existing price controls, but in fact the imposition of additional controls. Coming at a time when the nation is highly impatient of Government restriction, the pressure to cut through 1942 prices and to abolish OPA is expected to increase.

#### Inflationary Factors

As an antidote to this pressure favoring elimination of price controls, OPA is stressing the need for continuing controls on the premise that:

1: Price pressures on reconversion products will be especially strong. Many people with good incomes and savings will be anxious to buy the first supplies of products that have been scarce during the

2. For many months, while production is getting under way, the demand for most items will be the heaviest on record. Demand will be much greater than supply.

3. Supplies of many raw materials for civilian products and finished

goods will be limited for some time.

4 With the prospect of good markets, industry will be tempted to build up material prices in an effort to accumulate an inventory which assures them a continued high level of output.

These are the factors which OPA points to as inflationary.

#### **Buying Power**

On the other side of the ledger is a distinctly deflationary factor — namely, the reduction in the takehome wages of workers.

Government economists estimate that the drop in actual wages due to the elimination of overtime, and the down-grading in the type of work available, will cut heavily into the national income. This drop may be as much as 30 billion dollars.

There will still be an extremely high national income but for those who have lost either a portion or all of their income, the prosperity of the remainder who have not been hit would be small solace.

The cautions approach toward the elimination of price controls is to lift the regulations when prices

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work themselves lower than the permitted ceiling-in effect, when ceilings are no longer necessary.

#### **Problem of Timing**

The co-existence of inflationary and deflationary factors will lead to confusing and contradictory actions on the part of Government. On the one hand, OPA warns against inflation and straps prices to the 1942 levels-and on the other hand, the War Labor Board eases wage controls and President Truman asks for increase in the minimum wage

The problem is held in Washing-

ton to be one of timing. Government policy will favor increase in the basic wage rate and increase in the minimum wage rate—but it is felt that this increase should be granted only after reconversion has been accomplished.

In the interim, some wage increases will be granted to get unskilled workers back into the less desirable heavy jobs. Example is the higher wage scales in the cast iron soil pipe industry. The wage boosts will mean higher prices for soil pipe, but this is excused on the premise that lack of soil pipe will seriously impede the post-war construction industry.

Again, in the matter of timing, the Government is prepared to bolster prices in the event that there is any break in price levels. This has been the policy in regard to agricultural commodities, and will be continued.

The question naturally arises as to whether Government is capable of timing a process as complicated and all-inclusive as the reconversion program.

Here it is felt that the demand for goods and the accumulated wartime savings can be managed so that they become fully apparent on the market only when there are sufficient goods to fill the demand.

### OPA's Reconversion Price Program

#### MAJOR OBJECTIVES



ANY RECONVERTING MANUFACTURER IS FREE TO SELL AT EXISTING CEILING PRICES. However, in any case where price adjustments are necessary to provide a prospect of good profits when production gets rolling, OPA WILL PROVIDE RECONVERTING MANUFACTURERS WITH NEW PRICES.

#### I-INDUSTRY-WIDE ACTIONS

THIS IS THE BASIC PART OF OPA'S RECONVERSION PRICE PROGRAM FOR RECONVERTING INDUSTRIES. OPA CONSULTS WITH INDUSTRY:

- AT MEETINGS
- BY CORRESPONDENCE
- NECESSARY PRICE ADJUSTMENTS
- ARE MADE IN THE FOLLOWING WAY:

TAKE 1941 COSTS	ADD ADJUSTMENTS FOR	LEGAL INCREASES IN:	THEN ADD 1936-39	THIS GIVES THE NEW	IN THIS EXAMPLE,	ANY FIRM IN THIS INDUSTRY CAN INCREASE ITS	
	MATERIALS AND PARTS PRICES	BASIC WAGE RATES SCHEDULES	AVERAGE PERCENTAGE MARGIN OF PROFIT ON COSTS	(1941 Price was \$97.00)	THIS WORKS OUT TO AN "INCREASE FACTOR" OF 11.15		
(\$)			8% of \$101.00	(\$)		1941 PRICE BY THIS PERCENTAGE (11.1%)	
\$ 90.00	\$4.00	\$ 7.00	\$8.08	\$109.08	11.1%		

INDIVIDUAL FIRMS THAT NEED BIGGER ADJUSTMENTS MAY APPLY FOR THEM UNDER THE INDIVIDUAL-FIRM ADJUSTMENT PROVISIONS AT THEIR OPA DISTRICT OFFICES.

#### II-INDIVIDUAL-FIRM ADJUSTMENT PROVISIONS

There are three circumstances under which a particular reconverting firm may apply for necessary individual adjustments.

- A firm that needs bigger adjustments than the industry-wide price increase factor allows.

  A firm returning to civilian production before its industry requests and receives an industry-wide price increase factor because the industry as a whole never factor.

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To accomplish this timing, OPA is working with the War Production Board, and price control has been a major factor in the control policy of the WPB.

#### Control Through Pricing

Example is the restrictions which were retained on home construction. From the viewpoint of the bulk of materials going into housing, WPB might have been justified in a quick elimination of construction controls. However, in items such as soil pipe, and similar short items, it is feared that construction contractors would bid up prices if building restrictions were lifted early. This might well touch off an inflation in real estate that would lead to wild speculation in building values.

OPA threw its weight toward the retention of home building controls until components can be easily procured.

While these moves all are planned with great detail, the temporary delays on one reconversion program have a pronounced effect on employment. In the case of construction, the delay until winter means in most sections of the country a delay until next spring and summer, as home construction is not economic during the winter months.

#### Truman's Position

A summary statement of the Government's position in price control was contained in President Truman's message to the convening Congress. The portion dealing with price control follows:

"Immediately after the Japanese decision to surrender, the Office of Price Administration moved promptly to eliminate rationing of gasoline, fuel oil, stoves and processed foods.

"During the transition period, the Price Administrator, of course, will eliminate rationing and price controls on one commodity after another just as soon as supply comes into balance with demand. At the same time he will make whatever price adjustments are required to facilitate rapid conversion and reemployment.

#### Stabilization or Inflation?

"However it will be necessary for him to continue to resist unreasonable pressures for higher prices on some commodities, just as he has resisted them all through the war. In resisting these pressures and in carrying out his difficult responsibilities, I must state clearly that he has both my backing and my confidence.

"It will similarly be necessary for the Government to resist pressures for increases in wage rates which would imperil price ceilings.

"Without some general stabilization the consumer cannot be protected. Without stabilization, reconversion cannot proceed as rapidly as it should; for stability of cost is indispensable to sound business planning.

"The price control and stabilization program has received the backing of the great majority of businessmen throughout the war period. With few exceptions, business groups have realized clearly their own personal stake and the stake of our basic economy in the success of the anti-inflation program.

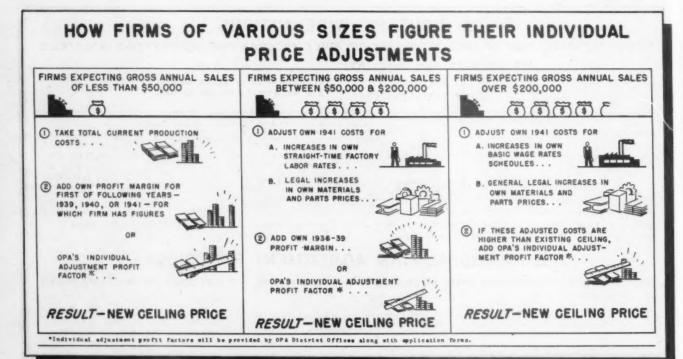
#### Long-Range Policy

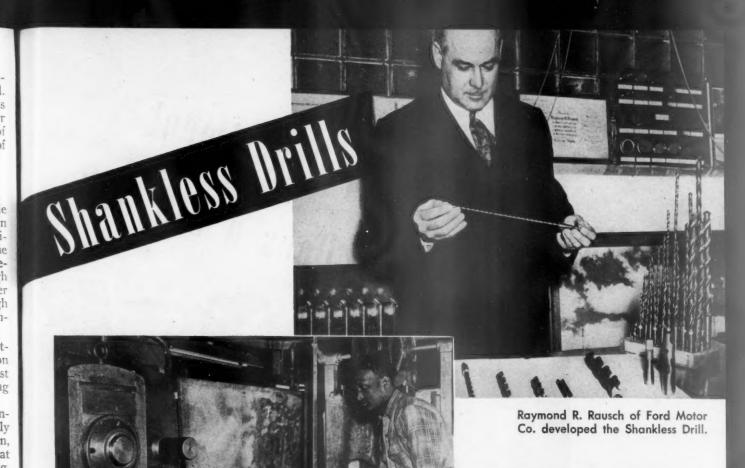
"During the months that lie ahead, however, some groups in business may be tempted to substitute for this long-range wartime thinking, a short-range policy designed to secure prices high enough to provide immediate profits over and above their temporary high costs of production due to their initial low volume.

"These pressures must be resisted. Prices must be held firmly on reconversion items as well as on cost of living items during the coming months.

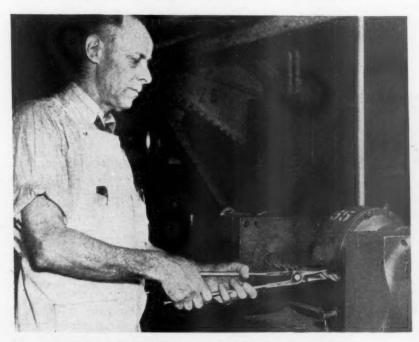
"The American people are entitled to a firm assurance not only on the part of the Administration, but from the Congress itself, that rents and the prices of clothing, food, and other essentials will be held in line. They are also entitled to buy washing machines, vacuum cleaners, automobiles and other products at prices based on our traditional system of high output and low unit costs.

"The promise of good profits for businessmen must not be based on small initial volume. It must be based on the full all-out production which it is my belief that American industry will rapidly achieve."





The operator inserts a white hot strip of steel bar stock in a special Ford-designed form-rolling machine in use at the Rouge plant of the Ford Motor Company. Here the bar stock passes through two rollers, emerging as an elongated flat section.



This machine places the twist in the fluted bar stock.

OW initial cost, long life, and a high degree of accuracy are a hard combination to beat in any industrial product. And these are the outstanding features of the new shankless drills developed by Raymond R. Rausch, general plant manager at the Ford Motor Company's River Rouge plant.

From the metal worker's point of view, the chief fact about the shankless drill is that it is twisted from pre-shaped bar stock, rather than machined out. Drill users will probably be more interested in the performance of the drill.

Developed shortly before the war, the new type drill has been used in many plants operating under war contracts. With the end of the war, it will become available to more and more users. Since the basic features are not patented, it is expected that a number of drill manufacturers will produce this type of equipment, though for the moment there is only one company making it commercially.

The shankless drill is made in two parts—the drill body and a removable taper shank known as a "drill driver". Drill drivers are being made by two commercial manufacturers, with standard sizes available for all drill sizes and spindle diameters.

By separating the sections of the drill ordinarily devoted to drilling (drill body) from the section de-

(Continued on page 366)

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The Compact Purchasing Department

Purchasing Agent Earl Bixler at left, with his four assistants

THE Cannon Electric Development Company of Los Angeles is one of the many companies that has crowded one or two decades of normal growth into a few hectic years, under the pressures of wartime necessity. This company is a chief supplier of electrical connectors or plugs, hundreds of thousands of them every month, used in all types of aircraft, and with many another war and peacetime use. In addition, manufacturing many other electrical specialties, while also preparing a comprehensive program for post-war productions, it became necessary to build up a rather heavy operating personnel, very quickly. But as is the case with most progressive companies, Cannon, along with meeting many rush demands to enable completion of thousands of vitally needed aircraft, constantly carried on engineering and production research with resultant applications, in the development of new methods, equipment and materials, and in the training of employees for greatly increased individual efficiencies. As a result,

Purchasing and production control are coordinated under a single executive at Cannon Electric Development Company



RICHARD L. ROWEN

Manager of Purchases and
Production Control

with a little under 1,500 employees today, the production of plugs is nearly as great as at the peak when well over 2,000 persons were kept very busy.

Due to the nature of the products, the parts of which constitute more than 18,000 catalog items, with the fairly expensive materials used—aluminum, zinc, copper, brass, plastics etc.—and the closely controlled, precision manufacturing processes, the dollar value of production in relation to personnel and size of plant is exceeded by few companies. However, nearly 150,000 square feet of space in the main Production Plant No. 2 and the nearby Specialties Plant No. 1, is pretty well packed with a great variety of ma-

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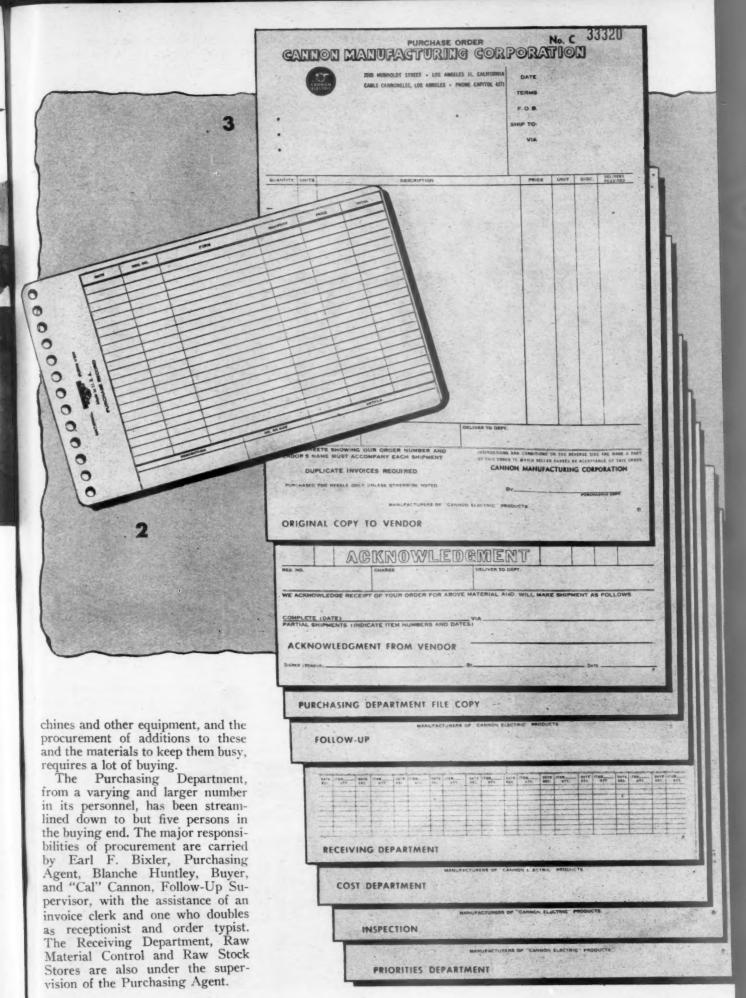
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Heading this whole set-up is Richard L. Rowen, who has the dual responsibility of Manager of Purchases and of Production Control. His Secretary, Katherine Walsh, acts as Priorities Co-ordinator, and the Manager, Fred Clark, of the Sub-Contracting Division (with two clerical assistants) reports directly to Mr. Rowen. In his capacity as Manager of Production Control, Mr. Rowen has not only the close association with procurement, but through its various subdivisions he has the over-all picture

and responsibility of guiding what is purchased and when and where it is used, through the key persons in each of the contributory departments under his control. Thus all of these functions that depend one upon another, have evolved into a system of co-ordination that is wholely logical, creating conditions of administration that tend to allow for the development of maximum efficiency with a minimum of staff and of record-keeping.

As is customary in a procurement set-up, there is first the

origination of the need tor some type of supply, with its translation into a "Request to Purchasing Department" (See Form 1). These normally come through from Foremen or Supervisors of various departments, plant or office, or other authorized persons, often with approval required from such higher executives as the General Superintendent or Chief Engineer. Many times in the case of buying items of major importance or certain new items, Mr. Rowen analyzes the important details and there may be necessary consultations with other executives. But generally the originator of the request retains the second (yellow) sheet, and sends the first (white) sheet-via pneumatic tube-to the Purchasing Department unless it is a commodity carrying a priority rating. In that case it goes first to the Priority Coordinator, for entry in her records and to receive the proper notations in the spaces provided.

No hard and fast rules are followed as to who will buy what, but in general the Purchasing Agent does the purchasing of metals and inventory items. Most of the local buying is done by telephone, with confirming Purchase Orders following by mail. This and other buying is guided by salesman contacts, a very good library of catalogs, and from a complete record of past purchases. The latter is kept on "Purchase Record" forms (See Form 2), each one carrying a complete record of all purchases of a specific item and inserted in its proper loose-leaf book. There are 25 of

these books, indexed with the names



Stockroom of finished component parts ready for assembly

This view shows the unfilled order files at right. The purchase record is kept in 25 loose-leaf books (foreground), classified as shown in the attached table

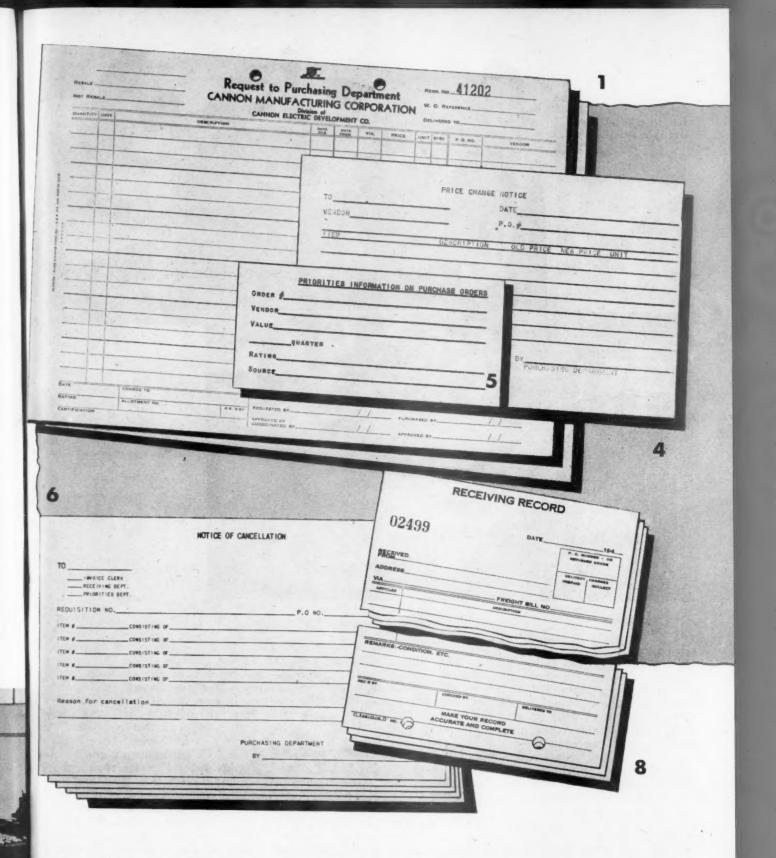


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of the types of items they carry, kept in a small, movable bookcase on casters, with the index on cards on its top.

When all of the pertinent, guiding data has been entered on the "Request to Purchasing Department", the buyer clips it to the next unused, pre-numbered Purchase Order, and passes it on to the order

typist. This eight copy, "Rediform", manifold Purchase Order (Form 3) is used as follows. All sheets are of different colors. The first three, (1) Vendor's order and (2) attached Acknowledgment, (3) Purchasing Department copy, carry on the reverse side, the 12 items of Instructions and Conditions to which the Order is Subject. When copy 2

(Acknowledgment) is returned, it is attached to copy 3, at the bottom of which are 100 spaces for records of Date and Quantity Received, the same as is on the Copy 5 which goes to the Receiving Department for use in checking in the commodity ordered, after which it is returned to the Purchasing Department to notify exactly what has

The Sub-Contracting Division is also a compact office unit



Final assembly operation in the manufacture of Cannon plugs

been received and when. Copy 4 is used for Follow-up and is kept in the follow-up man's file until the matter is properly disposed of, after which it is destroyed.

Two, open top files, mounted on frameworks with rubber-tired wheels, are used to contain the No. 3 copies of unfilled orders and of orders filled out for which no invoics have as yet been received. Both are filed alphabetically as to Vendors' names. They finally come to rest in the Purchasing Depart-

ment filled-order file.

Copy 6 goes to the Cost Department for use in costing but subject to later corrections if such may be necessary. Copy 7, the Inspection Copy, is not always used, but on items about which Inspection needs the information which it carries it becomes useful. The last copy, No. 8, is sent to Priorities when the information it carries is pertinent in checking and recording the poundage or quantity ordered against the

current allotment. In any event it ends up in the Purchasing Department's Purchase Order numerical file where it can be used as a crossfile reference to Vendor's name and

Request to Purchase.

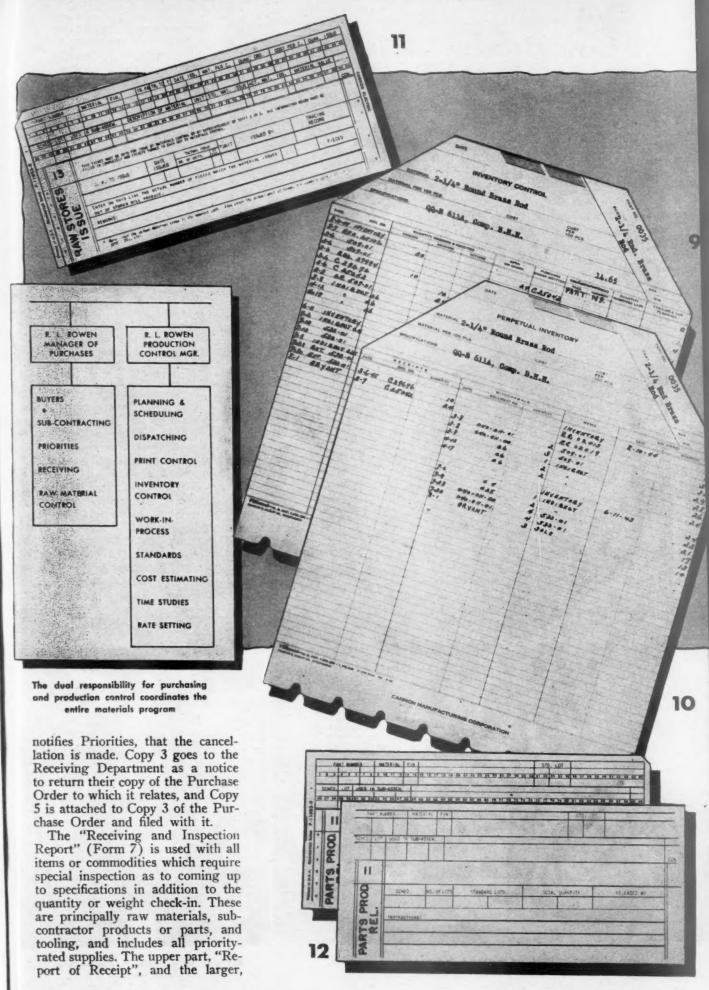
Posting in the "Purchase Record" books is done by Cal Cannon, as follow-up man. The first posting is done each morning from the previous day's order placements, with the entry of Date, Requisition Number and Vendor's name. After that he does the second posting of orders for which invoices have been received recording quality, price and total.

The Sub-Contracting Division places its own orders and following the same procedures, but with a final filing in Purchasing. It handles such items as screw machine products, anodizing, special molded rubber parts, plastic parts, and "overflow," which includes all other outside machine work, tool making and plating, when such is necessary to augment the company's own production facilities.

Payments of bills are made from records of purchase and receipt sent to the Cost and Accounting Department, and when the invoice shows a changed price that is proper, a "Price Change Notice" (See Form 4) is made out in duplicate in Purchasing by the invoice clerk, who sends the original on the clips the carbon copy to Copy 3 of the Purchase Order as a notation that the matter has been handled. Similarly the invoice clerk makes duplicate copies of the "Priorities Information On Purchase Orders" (See Form 5) when there are changes in values on any Purchase Order that should be recorded by Priorities.

When it is necessary or advisable, for any reason, to cancel an order or any part of it, the "Notice of Cancellation" form (See Form 6) is made out in quintuplicate-Copy 1 is kept by the originator, Copy 2 notifies Accounting and Copy 4

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#### CLASSIFICATION OF PURCHASE RECORD

BOOK 1
Tubing Steel
Strap Iron
Angle Iron
Channel Iron
Screw Stock
Cold Roll Steel
Misc. Steel
Furniture Steel
Extra Deep Draw
Flat Galvanized

BOOK 2

Auto Body

Dreadnaught Ground Stock Nudie Bessemer Rod Ketos S.A.E. Steel Tool Steels Pressure Die #8620 Steel Vince Steel

BOOK 3

Mill Plate Drill Rod Mild Steel Hat Rolled Stainless Steel Cast Iron

BOOK 4

Lamps (Light Bulbs) Buzzers & Fusses Misc. Elec. Supplies

BOOK 5

Drills
Bakelite
Carbon
Morso
Union Twist

BOOK 6

Tools
Tool Bits
Taps
Chasers
End Mills
Reamers
Knurls

BOOK 7 Valves Vises Cutters Pliers Misc. Tools

BOOK a
Nuts
Rivets
Eyelets
Washers
Bead Chain
Bolts

BOOK 9

Mach. Screws
Fill. Hd.
Flat Hd.
Binder Hd.
Round Hd.
French Hd.
Oval Hd.
Square Hd.

BOOK 10 Cap Screws

BOOK 11

Set Screws Wood Screws Lag Screws Misc. Screws Solder Welding Rod

BOOK 12 Aluminum Alloys

BOOK 13 Copper Base Alloys BOOK 14

Diecast Foundry Lubricants Plating Sandblast

BOOK 15 Furniture & Fix.

BOOK 16 Switches Tape Tool & Die Cable Braid Lamp Dip Sleeving Leather Belts Gloves

BOOK 17 Miscellaneous

BOOK 18 Wire

Points
Grinding Wheels

Sanding Belts V Belts

BOOK 20 Paint

Rubber BOOK 22

Bearings BOOK 23

Phenolite Bakelite Fibre

BOOK 24

Misc. Purch. Parts Cartons Shipping Supplies

Saws Files lower section, "Report of Count and Inspection" give places for entry of all pertinent information. Stock Control Copy No. 1 is sent to Priorities to be checked against the previous entry made with pencil, from the Purchase Order, so that the finally correct amount may be entered in ink against the allotment, if any. It then returns to the Inspection Department file. The Purchasing Copy, No. 2, on the various items, is sorted into Sub-Contracting and Raw Materials categories. The former goes to Fred Clark for his information and then to Purchasing and final filing. The others go to the Material Control section of the Production Control Department, where the perpetual inventory records on raw material are kept, and thence to filing in Purchasing. The last copy goes directly to Cost Accounting as a final confirmation or correction previous to payment of bills, and for use in costing.

In addition to the check on incoming shipments in the Receiving Department on the Copy 5 of the Purchase Order and in the R.I. (Receiving and Inspection) Report, on all receipts of raw materials the Receiving Record form (Form 8) is used in duplicate as a quick notification to Material Control that the material is available. The second (yellow) sheet is sent up as soon as made out, and the first sheet is attached to the R.I. sheet to follow up later and constitute a double check. A third (tissue) sheet remains in the book as the department record. The same procedure is fol-

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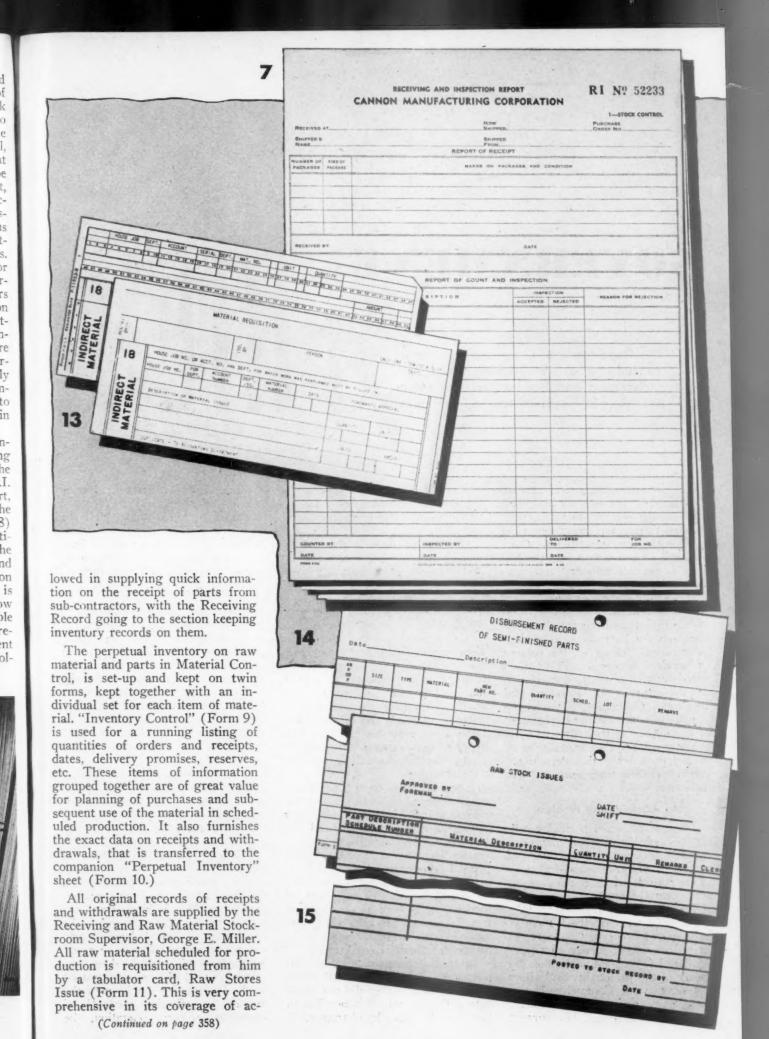
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Stock of aluminum ingot and counting scale for small parts



Rod and tubing stock in raw material stock room



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## GOVERNMEN

The Department of Commerce revaluates its function as the meeting point for government and the businessman; small business to receive special attention

A S Government controls necessitated by the war are abolished, and one by one the many agencies created during the emergency close their doors, the Department of Commerce is looked upon as the residual heir to provide industry and business with many pre-war servicesand possibly some new ones.

The extent to which the Commerce Department becames a guiding force for business is as yet undetermined. However, the pattern of services rendered will be tinctured by the pre-war organization of the Bureau of Foreign and Domestic Commerce. Purchasing Agents looked upon the Department of Commerce as their link to Government prior to the shredding away of functions from this department through various emergency and war

measures.

#### An Administrative Problem

The trend toward normalcy calls for the abolition of emergency Government agencies, and the return of such of their powers and functions as are considered beneficial to some permanent Government department.

This may well mean that PAs will again look upon the Bureau of Foreign and Domestic Commerce as their Government service agency.

There has been speculation on the impact of the personality and views of Secretary of Commerce Henry A. Wallace upon the department. From all indications, his current concern is largely toward reviewing the Bureau of Foreign and Domestic Commerce, rather than indoctri-

His first emphasis will be on administrative phases of the Bureau, and a major stress is likely to be placed on aiding small business, on the premise that this group is in greatest need of a Government serv-

Major work of the Bureau of Foreign and Domestic Commerce is the compilation of practical economic data on export and import, data on the industrial economy, and on the domestic system of the distribution of goods and services. The Bureau has a service function both in providing general data and in giving specific information to industry and business.

A special Division of Small Business has been established in the Bureau, and it is likely that any major innovations which may be developed will be largely for the benefit of smaller business. In addition to the general economic data which is made available, smaller business will be aided by the development of modern methods of accounting and record-keeping, and help will be extended on the most recent developments in industrial engineering.

In consideration of any such innovations, it might be well taken into account that they did not originate with Secretary Wallace, but in fact preceded his administration.

An example of a recent development under Secretary Wallace is the idea of publishing a clear and non-technical description of patents which are available for sale or lease, with the purpose of bringing together inventors and manufacturer.

#### Types of Service

These are mentioned merely to suggest that there is no political bias nor particular economic bent apparent in the Commerce Department, and that the current effort at rejuvenating the Bureau of Foreign and Domestic Commerce appears based on improvement of administration and extension of service, rather than any ideologies which have been associated with Wallace from time to time.

A case history, which the Bureau cites as an example of the type of service it can render, gives an interesting picture of the extent to which the Government has gone to provide a service to a businessman.

The case history is reported as

A wholesale grocer operating in a thriving eastern community was experiencing difficulty in meeting competitive prices. When he did so, he lost money. The obvious remedy was to cut expenses, but he could not see how this could be done.

Having read of a report prepared by the Distribution Division of the Bureau on effective methods of wholesale grocery operation, he Commerce Secretary Wallace

His department may resume its Hoover role of Government service agency for Purchasing Agents.



# OF FULTO BUSINESS?

wrote asking for a copy and briefly outlining his problem. In filling the request, this division asked that the wholesaler furnish additional facts so that a more detailed examination of his specific problem could be made.

The distributor then expressed a desire to come to Washington for a thorough discussion with Bureau specialists. The division arranged an appointment, and suggested that he bring with him such data as operating figures, payrolls, and blueprints.

#### Wholesaler's Methods

It soon developed in this meeting that the wholesaler's methods of operation were out-of-date. His profit and loss statement showed clearly that his operating costs were higher than necessary, while his margins were short. Distribution specialists, thoroughly familiar with modern procedures, explained that to solve his problem, he would have to: (1) revise his selling policy and simplify his system to reduce costs, and (2) increase his margin through special commodity promotion.

An analysis of his customer ac-

An analysis of his customer accounts revealed that there were a large number of frequent small orders made by a fairly well defined group of customers. And even the better customers had a spotty record showing that the wholesaler had no clear-cut policy on small orders. Since certain costs accumulate on

the basis of number of orders, it was apparent that this was one of the causes of high expense.

#### **Individual Prescription**

It was then agreed that a selective selling program should be set up in which customers would be encouraged to place orders at stated intervals and to buy the whole line instead of only low margin staples. This involved an overhauling of margins so that a regular customer buying the whole line could "average out" with a satisfactory margin.

At the same time, the wholesaler was advised to establish for all customers a rigid minimum on the sales quantity of separate items, and a minimum dollar sales per invoice for "service" business. It was further suggested that cash and carry sales of small amounts should be allowed.

Bureau specialists then studied his warehouse layout. His methods of receiving, storing, order assembly and shipping showed plainly that certain improvements would result in speeding up the entire process and also reduce costs. For example, a separation between the reserve stocks and the active stocks would permit an "assembly line" handling of the latter.

It was then explained to the wholesaler that a new system of order taking and billing would be necessary, and that such changes, necessary for the assembly line technique, would require an entirely

new allocation of his warehouse space. Thus his old system would have to be scrapped so that his goods and warehouse functions would come together in the right order at the right time.

The second major problem—gross margin—was next tackled. The wholesaler's records revealed that his overall gross margin was a combination of low margin selling on many staples, and high margin selling on his private label lines and certain other goods.

To build up his proportion of sales on high margin goods, he was advised to promote them aggressively and to put little or no effort behind the less profitable items. Such a program would insure salesmen doing a selling rather than a routine order-taking job.

The complete plan made sense to this wholesaler, and he agreed to put it in practice. In subsequent correspondence, he reported that through sales promotion a larger proportion of his customers were buying the whole line. His expenses had gone down and at the same time, his overall margin level had improved.

And although some expenditures had been necessary in making the warehouse changes, these were more than offset by results obtained. His order-filling processes were accelerated, and the other warehouse functions were performed with a minimum of manpower.

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By W. J. ROEMER, Purchasing Agent The Bristol Company Waterbury, Connecticut

## How Can The P. A.

## Help The Salesman?

HOW can the Purchasing Agent help the Salesman? One thing is certain; the Advertising Manager, Sales Engineer, Purchasing Agent and Salesman are in the same plane, they sit at the same desk, and they are involved in the same problems from the beginning to the end of the transaction.

In answering this question, we must first return to basic fundamentals. This may seem elementary, but if you follow along with me in this discussion I shall endeavor to give a clear picture of the Purchasing Agent and the Sales Engineer, and also how advertising fits into this same picture. Some basic facts about Purchasing Agents and Sales Engineers, and the way we handle salesmen are a necessary background to the clear comprehension of this subject.

#### **Buyers and Sellers**

What is the background of a Purchasing Agent? Some of us have had experience in engineering, production, manufacturing, while others have been salesmen on the road, or engaged in sales work. My background, before I was appointed a Purchasing Agent, was seventeen years experience as a Sales Engineer and Manager of the Service Department. I had had continual contact with our customers and sales offices, and the customer was always my prime concern.

May I present for your consideration, a picture of the background, training and duties of a Purchasing Agent? The Purchasing Agent should have a very thorough knowledge of his own company. He should be familiar with the product that is manufactured, with the methods and materials used in manufacturing this product, also with the procedure and policies of his company. Let us say, his background should enable him to be the contact man for his company.

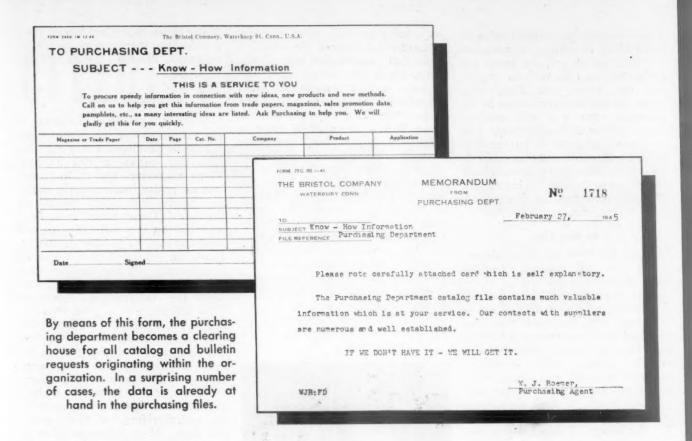
Now, let us proceed to discuss the background of the Salesman. To go on the road as a Sales Engineer, the salesman should have a very thorough background and knowledge of his product. He should spend a considerable amount of time in training, in learning the ins and outs of his product, and studying the routine and policies of his company. The rest of his qualities as a man and good fellow we can skip over for now.

#### Reception and Interview

The Purchasing Department of The Bristol Company will do everything they possibly can to give a Sales Engineer a pleasant reception. Let us start with the procedure as a salesman enters the lobby. He presents his calling card to the receptionist, who in turn passes it in to the Purchasing Department. My secretary records the card and proceeds to pick out of the open order file all the open orders from his company, any open correspondence or quotations, and delivers all this data either to me or to one of my assistants. We are then prepared to interview this gentleman in my office or in one of the conference rooms.

The first thing is, what shall we talk about? There may be a word or two of greeting, but then we get down to facts and usually we ask the salesman if he has anything particular on his mind, any new ideas, or new products. This will lead us into detailed discussion of products, open quotations, correspondence, and open orders. With times as they are today, we like to make it clear to all the sales representatives just what orders are on the books. Many salesmen do not

Address given before the Technical Advertisers Association, at the Engineers Club, Boston, Mass.



know what orders we have sent his company and are very much interested. We ask their help in expediting orders. This point alone has been a tremendous help to us in keeping an even flow of material coming into our Receiving Room This conferfrom our suppliers. ence may point out ideas of interest to the various men in our Engineering and Manufacturing Depart-Many times a conference that started this way has ended up with a gathering of eight or ten men, so that many of us have been completely informed as to the status of the products in question. This goes on still further and we may even take him on a visit in our plant, to get an even closer view of the relation of his product with ours.

It is my personal feeling that time is not wasted in these interviews and that we never know but what some point may be brought up that will be of a definite advantage to both the buyer and the seller. We go through this procedure with every sales representative. I'm going to be very emphatic in my opinion and add that it has brought some excellent results.

#### Meeting a Sales Quota

During my five years as a Purchasing Agent, and especially during this hectic time, I have had many interesting experiences. Not so long ago, a gentleman came in my

office and after we went through the usual procedure, I asked the question, "How is your boss?" The answer I got was, "He's very well, but he gave me a rather tough assignment for this week." "Well," I said, "What was the assignment?" This happened to be Tuesday of the week and rather late in the afternoon. His reply was that his boss expected him to turn in \$50,000.00 worth of business this week.

That amount may seem large or small, but in this case, it was a tough job. It flashed through my mind that perhaps I could help him. We had received a very sizable contract a week or two previously and this would result eventually in a nice sized order for this particular gentleman, but not in time to square him with his Sales Manager. I excused myself and gave him a magazine to read. He was perfectly willing to stick around a few minutes longer. I returned to my office fifteen or twenty minutes later, and asked him if he could wait another few minutes. Finally my order clerk came in to me, after I had given her a few instructions outside, with an order which I signed and presented to this gentleman.

He had previously said that his boss expected him to produce \$50,000.00 worth of business. When I presented him with an order for \$66,000.00, he looked at me with a big grin on his face, jumped up and

grabbed his hat and coat. "Where are you going?" I questioned. He replied, "Where do you think?" I don't think it took him more than a half hour to rush back to his Sales Manager's office with that order. Can a Purchasing Agent help a Salesman? Judge for yourself.

#### Reaching the Right Man

Continuing on with this subject of an interview, many sales representatives feel that if they could only get to the man who actually uses the product, the fellow out on the bench, or the Production Engineer, or someone who is directly concerned with it, they could get an order. Well, that may be true, and their problem is—how to get there? So they hear of somebody who works out in the plant and then they come to our company and ask for that gentleman.

ask for that gentleman.

With our system, the card comes to my desk regardless of whom he asked for, and I call the salesman in. He usually addresses me by the name of the gentleman he asked for. I am glad to have him sit down and tell me about his products. I should know what our requirements are and whether his product will fit into anything that we need. Sometimes we have no interest in what he has to sell, but many times we are very much interested, and we end up in a conference room with six or eight of our engineers.

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These meetings prove most valuable to all of us, including the salesman.

I could go on and cite many experiences, but I do wish to emphasize this point, the Purchasing Agent should have confidence in the salesman, who is a well qualified representative of his company. The competent salesman is an example of his organization and management. Conversely the salesman should have confidence in the Purchasing Agent, for only then can the Purchasing Agents help him.

#### Mailing Lists

Many letters of the direct advertising type, and catalogs, come to the Purchasing Agent's office every day of the week. Concerns have advertising mailing lists that are a mile long, with the result that I as Purchasing Agent receive advertising data of every descriptioncigars, candy, silk stockings, women's apparel, and many such pamphlets are included in my advertising mail. I think some con-cerns may feel that the longer the list, the better. I asked one of my suppliers one day how many men in our company they had on their list and they showed me a stack of cards. twenty or twenty-five. I thumbed through the names and found that four of the men have been away from our organization for at least three years. The list apparently was never decreased, but always increased.

The Purchasing Office is an iniportant one and it is a good idea to direct the mail to that office if you have goods to sell. In The Bristol Company we handle this mail very conscientiously because we are always looking for new or better things. A great deal of this mail is routed out to the different men in our plant and to the Engineering Department. You would be surprised if you knew the interest that has been developed from a piece of direct mail. Samples have been requested and orders have actually been placed, and the products found entirely satisfactory. How many of you men send your advertising mail directly to the Purchasing Agent? I receive mail addressed to most anybody in our organization, from the President to the Office Boy. It usually finds its way into my office for attention.

#### **Up-to-Date Information**

When I first took over the Purchasing Agent's office, I inherited from my predecessor a very large, oversize wastebasket which was al-

ways kept in plain view of every salesman that entered the office. I took that wastebasket out of the office about the second day, and replaced it by a conventional sized wastebasket, inconspicuously placed in a corner. It is a known fact that some P.A.'s intentionally have a large wastebasket, but times have changed now, and that doesn't occur so often. Yes, some things do go into the wastebasket, as I am not interested in buying cigars, or silk stockings, but most of the direct mail pieces are actually read carefully and given attention. We cannot buy everything, but we can make it a point to be alert and help the Salesman and the Advertising Manager through this medium of direct mail.

Just a few words about our catalog file, of which I am very proud.



The purchasing department files should be the up-to-date source of information on all sorts of materials and equipment pertinent to the company's requirements.

We have some 500 product classifications. The file is arranged by product and number. You can put your hand on any catalog within a minute or two. The catalogs are not old and obsolete, but we try to keep them continually up-to-date and use the medium of the salesman to do that. Many times when the men come in to us we show them what we have in our file and ask them if it is up-to-date. If not, it is discarded and immediately replaced. This is usually done right out of the salesman's brief case.

Won't you gentlemen prepare your advertising data and catalogs in such a manner that we busy Purchasing Agents can pick out information quickly, that your facts are accurately stated, and also prepared in a size that will fit a standard file.

Many times orders are placed from the catalog; therefore, make the information definite. Leave out the mysteries.

#### Coupon Inquiries

We had a problem. In order to get maximum use out of our catalog file we developed a very effective plan that works in this manner. Many magazines and trade papers contain return business reply cards, or coupons, with which you are all familiar. These cards have been sent out by any individual in the company and we usually get the information requested, plus a visit of a salesman. By the way, be sure you always answer the card and send the information requested. This procedure is a good thought, but on the other hand we found out that much of the information was contained in our catalog file, or we in the Purchasing Department were completely familiar with the product. In other cases, we found that we had already investigated that proposition and, therefore, had all the available data. Many salesmen followed up these inquiries and naturally came to us in the Purchasing Department, some because they wanted to, and others because there was no alternative.

After discussing this problem with several advertising managers and other interested parties, The Bristol Company decided to try out a new idea with the result that we had a card made, a copy of which is shown herewith. It serves partly to avoid duplication and multiple requests for identical material, but even more important, it serves to put the Purchasing Department's very complete information and catalog file at the immediate service of anyone in the organization desiring detailed information on products or equipment. Every well conducted Purchasing Department should be a clearing house for this type of information, and this card is an invitation for our men to take advantage of these facilities.

A memo was attached to this card explaining its use, and sent to all superintendents, department heads, engineers, executives, etc.—totally more than 40 men. The idea has been very well received, with the result that we get many of these cards requesting information. A great many of the requests are answered the same day, as we have all the available data and can send it out immediately. When we don't have the information, we secure it as

(Continued on page 362)

## CELLULOSIC

# PASTICS THE BIG FOUR

The Cellulose Acetates are more widely applied to Civilian Products than any other plastics — "Celluloid," or, Pyroxylin, was the first of the "Modern" Plastics

#### By GEORGE E. HENRY

PREVIOUS articles in this series have discussed the wide diversification of the plastics field, the general versatility of the twenty or more base types that form two distinct groups known as the thermoplastic and thermosetting groups, and dealt more specifically with the phenolics, ureas, melamines and phenolic casting and cast resins, all in the thermosetting group.

The thermoplastics constitute an equally interesting group. There are about fifteen base types and they are of especial interest because of their adaptability as molding materials, industrial coating materials, lacquers, packaging materials and films and foil. All of them have been extensively used in the war effort and undoubtedly V-J day will loose pertinent revelations about their uses that will be of prime importance in peacetime production. Moreover, some of the newer ones offer superior physical, chemical and electrical qualities which along with potential postwar price reductions will rapidly bring them to the fore.

In the thermoplastic group are

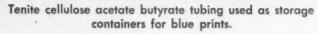
four types classified as cellulose derivatives for all of them have a cellulose base. These are cellulose nitrate, cellulose accetate, cellulose accetate butyrate, and ethyl cellulose. Others in the thermoplastic group include styrenes, methacrylates, several in the vinyl group, nylon and the unique silicones. All warrant the attention of Purchasing Agents whose companies are using or contemplate the use of plastics in any form. New uses and price changes are as sure as taxes, and likewise it

is important to know that suppliers—molders and fabricators—are upto-the-minute in the new developments, for their ability to competently advise may spell the difference between successful products, successful competitive products, or even profit and loss.

This article concerns the cellulosic derivatives, mentioned above. Their production in 1944 for all uses is estimated at about 150,000,000 pounds, as compared with 176,000,-000 pounds of the phenolic resins









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Army air force sustenance kits of transparent Tenite II, cellulose acetate butyrate.

which are the most widely used of all the plastics, and 75,000,000 pounds of the colorful areas. These figures convey an idea of the relative importance of these most used and best known plastics. In 1940 the production of the cellulose compounds was a little more than half that of the phenolic resins. The production figures might be materially altered were it not for the fact that the cost of the phenolics is roughly one third that of the cellulose compounds.

#### Celluloid - the Beginning

Celluloid, trade-name for cellulose nitrate or pyroxylin, was the first of the cellulosic plastics. In fact it was the first of the so-called "modern" plastics. Celluloid was born, believe i. o. n., because of the shortage of elephants, who ivory tusks which were utilized in the making of billiard balls and numerous ivory knick-knacks and more practical things became too costly. A prize of \$10,000 was offered by a billiard ball manufacturer for a suitable substitute for ivory. That was a lot of money back in 1870 (still is), but the pedigreed scientists of the day didn't get to first base in their quest for the ten grand.

However, a printer by the name of John Weslev Hvatt, whose name is revered in plastic circles, evolved the desired substitute for ivory. He had a small make-shift laboratory at Albany, N. Y. Tinkering with nitrate acid, citric acid, cellulose, alcobol and flour of camphor, and heat, he developed a soft mass of material that could be molded and which became hard on cooling. It was a brand new substance the likes of which Dame Nature herself had never created. His first product was a dental plate, rather than a billiard ball, a dental plate that could be flesh tinted, with the result that the new product figuratively and factually "changed the face of a nation." He called his product Celluloid. There was a continually expanding demand for the new wonder product with the result that Printer Hyatt established a plant for its manufacture at Newark, N. J. The plant is now a part of the Celanese Corporation of America whose cellulose nitrate products are still marketed under the original name "Celluloid."

Celluloid was extensively used for making products simulating ivory — practical things and gimcracks. Few are the persons who have not at some time used products made of Celluloid, or pyroxylin (the generic term for cellulose nitrates) from babyhood to manhood. Colorful baby rattles and numerous toys were made thereof. You may recall the celluloid collars and cuffs, and

the celluloid curtains that quite effectively housed in the carriage tops of automobiles and which could be rolled up and tucked under the seat. In due course the curtains took on a tawny hue that destroyed their viewfulness. And you may recall the sporty days of the brilliant, scintillating patent leather shoes-made of cellulose nitrate. Today you may be one of the favored few agile enough to cope with ping pong balls, another pyroxylin product. It may be that you have a fountain pen that takes a lot of abuse, doesn't leak and evidences none of the ill odors that evidence ink corrosion; the chances are that the pen barrel is pyroxylin.

Your bathroom may have a pearl-like seated throne that is durable and ornamental—pyroxylin sheathed, as are many of the colorful heels on stubby shoes whose open toes reveal pyroxylin coated nails

#### Cellulose Nitrate

The cellulose nitrate plastics are extensively used for the making of many products and these uses would undoubtedly be amplified were it not for the fact that pyroxylin is highly inflammable. As a matter of fact it is close of kin to the cellulose nitrate used in explosives. The nitrogen content of pyroxylin is about 11% while that in explosives is about

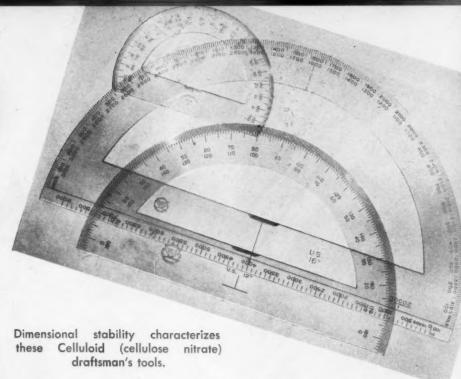


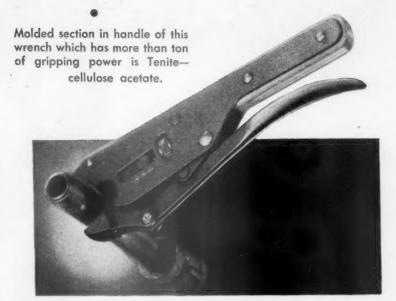
Telephone incorporating the bell and wire box, molded of Lumarith—cellulose acetate.

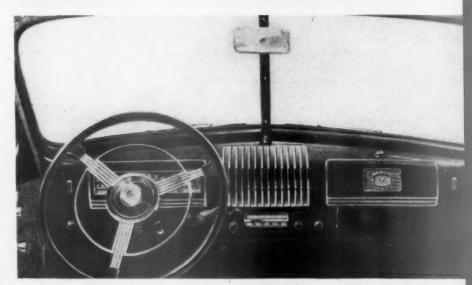
13%. Pyroxylin is not explosive, but it has an ignition temperature of about 350 to 400 deg. F. and burns rapidly when ignited. Accordingly it is not used for making products that may be subject to heat hazards.

These plastics offer numerous advantages from a physical and chemical standpoint that make them desirable material for many products. They are tough—the toughest thermoplastic material available. They have excellent resilience, as evidenced by the ping pong ball, and excellent water resistance. Continuous or intermittent exposure to water or high relative humidities does not affect their properties. They are not affected by dilute acids or sulphuric acid, though they are attacked by concentrated acids and alkali. They have excellent dimensional stability, maintaining close tolerances upon aging or exposure to varying atmospheric conditions. And they are available in unlimited colors, pastels, vivid opaques, printed transparencies, metallics, mother-of-pearl and marble effects and irridescents. Transparent sheets have the clarity of window glass and the blacks are as jet.

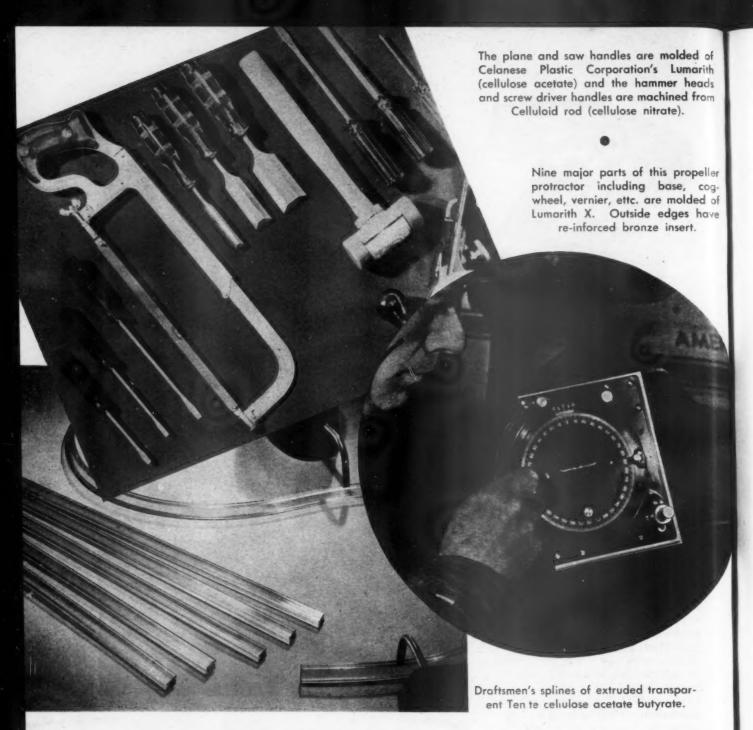
Among present day products made of the cellulose nitrate plastics are drawing and calculating instruments, instrument dials and crystals, storage battery casings and plates, name and identification plates, labels, index forms, fountain pens and pencils, optical frames, brush handles, tool handles, buckles, piano keys, handles, toys, coverings for seats and hamper tops, etc., etc. An example of the practical value of their toughness is found in the







Instrument panel and steering wheel of 1939 Buick molded of Lumarith cellulose acetate.



hammer and mallet heads made thereof for metal working in which service they withstand long, hard use and properly used, do not mar fine surface finishes. Also, professional motion picture film—the Hollywood type, is made of cellulose nitrate exclusively because of its long projection life. Industrial and educational films are of cellulose acetate.

The cellulose nitrates are not molded in the customary manner by custom molders. Material manufacturers supply molders and fabricators with sheet, rod and tube stock. The sheet stock is available from .005 thickness to 1". Actual molding is limited to pressing or forming shapes from flat sections. Rods are available in varied shapes

and sizes up to 3" diameter, and tubes are likewise available up to 3" diameter.

The material lends itself to machine fabrication. It is easily sawn, punched, drilled, turned, etc., but extreme care must be taken to prevent overheating of tools and material.

Among the better known cellulose nitrates are the following: Colluloid, which is one of the products of the Celanese Plastics Corporation, New York; Pyralin, made by E. I. du Pont de Nemours Co., Inc., Plastics Department, Arlington, N. J.; Nitron, Monsanto Chemical Co., Plastics Division, Springfield, Mass., and, Nixonoid, Nixon Nitration Works, Nixon, N. J. The Hercules Powder Company,

Wilmington, Del., produces cellulose nitrate in flake form.

#### Cellulose Acetatte

At present the most widely used member of the thermoplastics group is cellulose acetate. Evidence of its versatility, serviceability and merchandising appeal is found in the fact that cellulose acetate is more widely applied to the manufacture of civilian products than any other plastic.

Cellulose acetate also offers extreme toughness and resilience making for ability to withstand shock without breaking and the development of products with thin wall sections. The acetates have unlimited color range and take a fine finish, material and colors being

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quite stable in sunlight. They are tasteless and odorless. Their one weakness is that they have a decided affinity for moisture and an accompanying high rate of water absorption, a factor that must be given due consideration in possible end uses of products. However, special acetate molding materials have been developed in which the moisture absorption factor is much less than that characterizing the usual cellulose acetate materials.

ports fire much as does cardboard or wood.

The acetates have good machining qualities, and in machining operations the usual brass working methods should be followed. They tend to dull tools quickly. According to molders, machining should be on the cutting side, rather than filing or sanding, and of course care should be followed to see that the material does not become overheated, thus softening and binding tools and ruining the job. In fabricating parts they may be bonded by melting the contacting surfaces with acetone. Manufacturers have developed special cements for cementing parts together.

The acetates have been aptly described as beautiful yet tough. They have excellent physical qualities, good impact strength and resilience; good electrical qualities, and take an excellent finish which gives the colorful acetates A-1 sales appeal. They are unaffected by weak acids, and vegetable and mineral oils, and gasoline. Some essential oils and alcohols tend to spot them, and they should not be subjected to concentrated acids or alkalis.

Manufacturers have developed different cellulose acetate formulae looking to specific use values. Obviously it is a part of good judgment to consult with their engineers or molders and fabricators who are intimately familiar with the physical and chemical properties of the different formulae looking to the right selection for end use. The Celanese Corporation, for instance has developed a flame resistant acetate. and has also developed high acetal types expressly for war purposes that will undoubtedly have varied applications in postwar production.

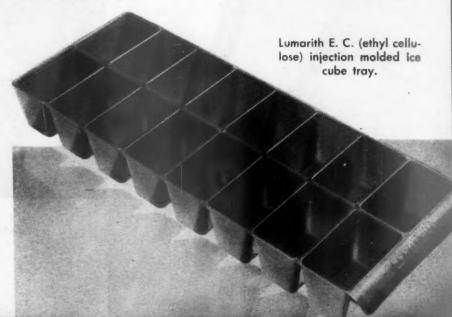
The range of products that can be made with the acetate is amazingly diversified and broad. Products include steering wheels, electrical insulation, gun stocks, radio cabinets, telephones, building hardware, colorful fish lures, instrument panels for automobiles, instrument panels, control knobs, radio grilles, dials, golf tees, tool handles, toiletry articles, toys and novelties. To the list must be added packaging materials such as the smart transparent boxes and containers now used for high grade merchandise and



No bluffing here. Poker chips of Tenite cellulose acetate.

cellulose acetates are injection molded which makes for fast production and low cost. Injection presses are limited as to product size, the general maximum being 16 ounces, though there are a few presses that will take 32 ounce shots, as they are called. However, 16 ounces of molding material will make a product of goodly size. Individual products involving the use of this much material are of course limited. Molding of larger units is done on compression presses such as are used for the thermosetting materials. The thermoplastics are also made in sheet form and by extrusion into rods of varied design,

Because it is a thermoplastic and begins to soften at 150° F., cellulose acetate should be used only in products that may be subjected to temperatures below that figure. It differs materially from cellulose nitrate in that it is not highly combustible. It burns slowly and sup-



such dainty things as women's headgear and orchids, and also protective packaging. Cellulose acetate sheet material can also be used for blowing bottles and other types of containers, and the heavier sheet stock can be stamped, or heat formed.

The publicized tradenames of different cellulose acetate materials are in no way indicative of their nature, as you will see from the following list of manufacturers of molding materials and their products: Lumarith, Celanese Plastics Corp., New York; Plastacele, E. I. du Pont de Nemours & Co., Plastics Department, Arlington, N. J.; Fibestos, Monsanto Chemical Co., Plastics Div., Springfield, Mass.; Nixonite, Nixon Nitration Works, Nixon, N. J.; and, Tenite I, Tennessee Eastman Corporation, Kingsport, Tenn.

## Cellulose Acetate Butyrate

Cellulose Acetate butyrate is a very close relative of cellulose acetate. The Tennessee Eastman Company is the principal manufacturer, and markets its product under the tradename Tenite II. The uses and qualities are quite similar to the cellulose acetate uses. It is stable

under contact with moisture, makingfor desirable dimensional stability. It ably meets use requirements where good weathering qualities and moisture resistance are involved.

Tenite II is produced in three grades, namely, general purpose, heat resistant, and impact resistant. Accordingly, it is being used for making numerous products including mechanical parts and housings. Among the more general uses are listed telephones, toilet float bulbs, pistol grips, steering wheels, and toothbrushes, these applications being evidence of qualities that especially fit the cellulose acetate butyrate material for numerous products. This plastic is also available for fabricating purposes in the form of sheets, rods and tubes, and mono-filaments.

It is a bit lighter than cellulose acetate, having a specific gravity of 1.2 as compared with 1.3 for the latter, which should mean about 5% more products per pound of material. The burning rate of cellulose acetate butyrate is slow. It ages well, and is but slightly affected by sunlight and age. Weak acids and weak alkalis affect it slightly and likewise it is but little affected by

hydrocarbons. Strong acids and alkalis decompose it. It is more stable than cellulose acetate due to its lower moisture absorption and lower volatile plasticizer content. And, it too is available in almost unlimited color range.

Tenite II is also used for making forming tools. Tennessee Eastman describes this use in a booklet "Tenite II Casting." The tools are made by casting the molten plastic into or around finished shapes or models. It is stated that such tools will form sheet metal into the corners of a die without becoming rounded; that Tenite II can be cast to finished size in the die without scraping and polishing; that it is relatively unaffected by temperature changes; and that compositions may be made hard or soft to suit requirements.

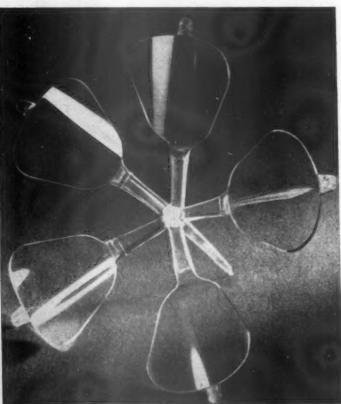
## Ethyl Cellulose

The fourth member of this group is ethyl cellulose. It is of different breed than the other cellulosic materials which the technicians describe as esters of cellulose, while ethyl cellulose is an ether of cellulose. You are probably more concerned with the use qualities of the

(Continued on page 382)

Insulating sleeves of transparent red Tenite being hammered onto handles of ordinary plastics.





Gas mask lenses of crystal clarity molded of lumarith—cellulose acetate.

## · Legal Technicalities Simplified

By LEO T. PARKER

A LL purchasing agents and other purchasers should avoid legal pitfalls involving contract obligations. Purchasers who have sufficient elementary legal knowledge to classify and simplify legal technicalities may avoid a majority of law suits and, also, win favorable verdicts in unavoidable suits.

The fact that a majority of the law suits hereinafter cited were decided by the higher courts during the past few weeks or months makes this article more than ordinarily important to purchasing agents and other purchasers. Therefore, readers should file these citations for possible future use in defending unavoidable suits.

## Legal Rights of Purchaser

First, it is important to review the legal rights of purchasers when a seller breaches a valid sale contract. Obviously, the purchaser is entitled to recover damages. However, under all circumstances a purchaser should avoid legal pitfalls before filing a suit based upon a seller's breach of a contract of sale. This may be accomplished by definitely deciding a proper legal basis of suit. A review of late and leading higher court decisions discloses that where there is a breach of a contract or warranty by the seller, the buyer may: (a) Accept or keep the goods and plead the breach by way of recoupment in diminution or extinction of the contract price; or (b) accept or keep the goods and file a suit against the seller for damages for the breach of warranty; or (c) refuse to accept the goods, if the legal title has not passed, and maintain a suit against the seller for damages for the breach of warranty; or (d) rescind the sale contract and refuse to receive the goods; or (e) if the goods have already been received return them, or offer to return them, and sue for the price or any part thereof which has been paid.

For example, in W. H. Bint Company v. Mueggler, 154 Pac. (2d) 513, reported March, 1945, it was shown that a purchaser accepted a bread wrapping machine and took legal title thereto. Later he

discovered that the seller had breached his warranty as to number of loaves of bread the machine would wrap per hour.

This court held that since the legal title had passed to the buyer he could sue and recover from the seller the full damages he sustained because of the seller's breach.

Also, see Gildner Bros. v. Ford Hopkins Company, 16 N. W. (2d) 229, reported January, 1945.

In this case the litigation involved the legal rights of a purchaser who had not taken legal title to merchandise.

This court held that he may sue and recover damages upon discovery of the seller's breach of the contract, and explained further that the measure of damages is ordinarily the difference between the contract and market price of the merchandise on the date the seller promised that the title would pass to the purchaser.

### Must Prove Damages

In order that a purchaser shall be entitled to recover full and "actual" damages from a seller who breached a contract of sale, convincing testimony must be introduced positively proving the amount of damages suffered by the purchaser. Otherwise, the court will allow only "nominal" damages, usually \$1.



For illustration, in Seal v. Fitch, 183 S. W. (2d) 533, reported February, 1945, it was shown that a seller contracted to sell certain equipment for \$6000, to be paid in installments of \$100 per month.

Later the seller refused to make delivery and the seller sued to re-

cover the possession of the merchandise and \$10,000 damages.

During the trial no testimony was given which proved that the purchaser was damaged by reason of the seller's breach. Therefore, the higher court refused to hold the seller liable for actual damages and said:

"Plaintiff (purchaser) proved no actual damages by reason of being deprived of the possession of this equipment and it follows that he could have recovered only such damages as the law infers he suffered by reason of defendants (seller) breaching their agreement, which are only nominal damages."

### Beware of Salesman's Promises

A verbal promise made by a salesman never obligates the seller unless (1) the salesman was authorized to make valid contracts; or (2) the salesman's statement has aspects of fraud; or (3) the purchaser promptly complained to the seller.



For illustration, in Bridges v. Harold L. Schaefer, Inc., 179 S. W. (2d) 17, reported June, 1944, it was shown that a buyer and seller entered into a written conditional contract of sale for certain machinery and equipment designed for use in the manufacture of ice cream. The contract provided that the equipment was sold F. O. B. the seller's factory without service wiring or plumbing, and that the contract alone expressed the final agreement of the parties and supersedes all prior representations, negotiations. warranties or agreements.

In the subsequent suit filed by the seller the purchaser testified that the seller's salesman verbally agreed to deliver a single phase electric motor, but shipped instead a 3-phase motor, which could not be used in connection with the type of electric current available in the locality.

In view of the above clause in

In view of the above clause in the written contract, and also because the purchaser did not complain promptly to the seller, the higher court refused to listen to the purchaser's testimony regarding the salesman's verbal promise. This court said:

"The contract does not say what phase the motor shall be; but, he says that the agent of the company, the salesman, told him that it would be a single phase motor. . . . He retained the motor that was sent him, and did not complain to the seller about it. It is the duty of one who makes purchase of equipment to do one of two things; either rescind the contract, if it is not lived up to, or retain the property and sue for his damage."

## Caveat Emptor

Considerable discussion has arisen from time to time over the legal meaning of the term "caveat emptor". Broadly, it means "let the buyer beware". In other words, under ordinary circumstances the buyer takes the risk of quality and condition, (1) unless he protects himself by a warranty; (2) or there has been a false representation fraudulently made by the seller. See Davis, 30 Mo. 406.

For example, in State ex rel. Jones Company, 179 S. W. (2d) 19, reported March, 1945, it was shown that a person purchased a



colored satin blouse, paying therefore the sum of \$1.95. She wore the blouse all the next day. In the afternoon she noticed an itching sensation around her neck and arms, and when she got home and took the blouse off, the dye had faded on

her arms and undergarment at her arm pits. It itched and would not wash off. She did not wear the blouse again, but on the next day tiny red pimples appeared over her arms and some on her neck and shoulder. Her physician diagnosed her condition as infectious dermatitis, a condition of inflammation of the skin caused by infection and irritation. The physician's conclusion was that there must have been some poisonous or irritating substance in the blouse, although as to what substance, he had no idea.

The purchaser sued the retail dealer for damages. The lower court allowed the purchaser \$3,000 damages. However, the higher court reversed the verdict saying that there is no implied warranty in the sale of merchandise except where the seller "undertakes" to supply an article for a particular purpose knowing that buyer trusts to the seller's judgment that the article is suitable for that purpose. The court further said:

"It may well be that there was an implied warranty that the blouse would fit plaintiff . . . So, in the present case, harmful ingredients in the blouse would make the garment undesirable for use by the plaintiff, but no more so than for the use of any other woman. Her use was an ordinary use, and not special."

Also, see the leading case of Shroder v. Barron - Dady Motor Company, Mo. Sup., 111 S. W. (2d) 66, which involved a personal



injury sustained by a prospective customer who was making his own demonstration of an automobile furnished by the dealer. The injury resulted from defective brakes. The injured customer contended that the automobile dealer was negligent because he failed to inspect the automobile and discovered that the brakes were defective. The higher court refused to agree with this contention. In holding the automobile dealer not liable, the

higher court said that a seller is not liable for latent defects not discoverable by reasonable inspection.

On the other hand, see Hunter v. Waterloo Gasoline Engine Company, Mo. Sup., 260 S. W. 970. In this case the testimony proved that a seller of farm equipment personally agreed to guarantee that the warranty of the manufacturer would be fulfilled.

Under these circumstances the higher court held that there was an "implied" warranty on the part of the seller that the equipment would prove reasonably satisfactory to the purchaser.

## Contract Made in Minnesota

Ordinarily, law suits involving sale contracts are decided in consideration of the laws of the state in which the contract was made.

For illustration, in McCans Brandtjen & Kluge, Inc., 179 S. W. (2d) 352, reported April, 1945, it was shown that a Texas purchaser purchased from a seller in Minnesota certain machinery for which he had executed his promissory notes and a chattel mortgage. The purchaser became arrears on his payments and he entered into a contract to purchase other machinery from the seller. The new contract discloses that the actual "cash price" of the new machinery was added to the old debt and a carrying charge of \$519.80 was thus added to the contract of purchase, making a total of \$2,620.80 which the purchaser agreed to pay.

The legal rate of interest charged the purchaser was based upon \$2,620.80. In a subsequent suit the purchaser sued to recover from the seller penalties for collecting usurious interest in Texas which, however, is legal in Minnesota.

The higher court refused to hold the seller liable, saying:

"We hold that the contract shows on its face that it is one made in Minnesota and performable in said state. . . . Texas laws applicable to usury cases cannot be considered in this suit and in the interpretation of the Minnesota contract that is before us."

Thus, irrespective of the nature of the legal controversy involving a contract of sale the laws of the state in which the contract was made are the controlling factor.

## Letter-Head As Evidence

Recently, a higher court held that when legal controversy arises over the state in which a contract was made a letter-head of the buyer and seller may decide the issue. For illustration, in Spurlock v. J. T. Son, 20 So. (2d) 525, reported March, 1945, it was shown that a buyer and seller entered into a written contract of sale by the terms of which the buyer agreed to purchase for a stipulated sum a stated and definite quantity of beeswax and hides and tallow. The seller alleged that the purchaser refused to make agreed payments and filed suit against the buyer to recover the full purchase price.



An important element in the suit was whether the contract was made in the state where the seller was located. The court said:

"The written contract between the parties, and which was in eyidence, was on appellee's (purchaser's) letter-head."

However, the fact that a contract is made on a purchaser's letter-head is not always conclusive that the contract in controversy was made in the state in which the purchaser is located. The testimony may prove otherwise.

Under all circumstances testimony of the "original intentions" of the contracting parties is important when deciding the "situs" of a written contract. But without proof of the intentions of the parties the court will base its decision on all available evidence. Therefore, the court may render its decision in consideration of relatively simple evidence that a contract was made on the stationary of either the seller or purchaser.

## When Title Passes

Modern higher courts consistently hold that under ordinary circumstances acceptance of a bank check by a seller from a purchaser is not "payment", and the debt for which it is given is not discharged if the check is dishonored. Therefore, the legal title to the merchandise does not pass to the purchaser, and the seller may regain possession of the merchandise by proper legal procedure.

For illustration, in Publicker Commercial Alcohol Company v. Harger, 31 Atl. (2d) 27, it was shown that a company is engaged in the business of selling alcohol. It requires payment in advance of the entire purchase price of all alcohols it sells. A purchaser gave the seller two signed checks as payment for a specified number of drums of alcohol. The checks deposited by the seller were dishonored for insufficiency of funds when they reached the bank on which they were drawn. The seller sued to replevin and regain possession of the alcohol. In holding in favor of the seller the higher court stated important law, as follows:
"So far as we have been able to

"So far as we have been able to ascertain, the decisions of the courts are unanimous to the effect that when a buyer makes a purchase for



cash but gives a check for the purchase price, the check constitutes merely a conditional payment which becomes absolute only when it is honored, and until this occurs title does not pass to the purchaser."

## When Check Passes Title

Frequently buyers who write and sign bank checks, in payment for merchandise, neglect to insert the correct name of the seller, or drawee. The legal question often presented the court is: When may the seller legally correct or change the name signed on the check, and be certain that legal title to the merchandise passes to the purchaser? Broadly, the established law is: Where the intended seller is incorrectly named, as, for example, where his name is misspelled or abbreviated or, as in the case of corporations, part of the corporate name is omitted, the intended seller may lawfully endorse the check the same as if it were correctly named and the legal title to the merchandise passes to the purchaser. Also, where the name of a seller is wrong-

ly designated, or misspelled, he may endorse the check as therein described, adding, if he thinks fit, his proper signature.

On the other hand, the authorities are emphatic that a negotiable instrument or indorsement made to a fictitious person cannot be treated as payable to the bearer and negotiated without indorsement, unless the person making it knows and actually intends to make the instrument payable to a fictitious person.

## Misleading Corporate Name

For illustration, in Jorgensen Chevrolet Company v. First Nat. Bank of Red Wing, Minn., 14 N. W. (2d) 618, reported July, 1944, it was shown that two salesmen represented a corporation known as R. E. S. Inc. They approached a purchasing agent, named Jorgensen, with the purpose of selling him certain coolers. The salesmen gave Jorgensen a circular bearing the name "Westinghouse" prominently displayed and showing a picture of the cooler. The merits of the cooler were fully explained therein. The circular also contained a photostat of what was called the "Westinghouse Commercial frigeration Warranty" executed by Westinghouse Electric and Manufacturing Company, the manufacturers of the coolers. Jorgensen assumed that the salesmen represented the Westinghouse Electric and Manufacturing Company. After



some dickering about prices on time and cash basis, it was agreed that Jorgensen should purchase four coolers for the cash price of \$1,055, all four coolers to be shipped in one consignment. In closing the deal, the salesmen prepared an order for the purchase of the coolers upon the terms stated. In the upper left-hand corner appeared "R E S Inc." Across the top in large type, commanding attention over other matter printed thereon,

was printed: "WESTINGHOUSE PRODUCTS Milk Cooler Department.

Jorgensen did not notice the "R E S Inc." printed in the upper left-hand corner. He then made a check in payment of the coolers to close the deal. He did not know the corporate name of Westinghouse and inquired what it was-"Westinghouse who," and they told him "R. E. S. Westinghouse." There-upon "R. E. S.—Westinghouse" was named as payee in the check. The "R. E. S. Inc. deposited and obtained payment on the check. Sometime afterward Jorgensen discovered that R. E. S., Inc. had no connection with Westinghouse except as a sales agency of its products; that his check had been endorsed by R. E. S., Inc., and that R. E. S., Inc. had received the proceeds thereof. Jorgensen instituted suit against the R. E S. Inc. to recover the amount of the check and also to cancel the written contract

In the ensuing litigation the higher court decided that title to the delivered coolers did not pass to Jor-

gensen, and said:

"Of course only the payee named in a check is entitled to receive payment. R. E. S., Inc. is not the payee named. There being no corporation or firm having the name R. E. S. Westinghouse, the payee named is nonexistent. . . . Consequently, the endorsement of the check by R. E. S., Inc. transferred no title, and plaintiff (Jorgensen) is entitled to recover.'

This higher court also held that Jorgensen could without liability cancel the contract. On this point,

the court said:

"It makes no difference in such a case that the person with whom the buyer is misled to contract is able to and offers to deliver the identical goods contracted for. A buyer has the right to choose not only the goods he purchases, but the seller of the goods also."

## Purchaser Should Know Real Seller

Also, see Winchester v. Howard, 97 Mass. 303, where the court held that a purchaser of merchandise may revoke the contract upon discovering that the merchandise in fact belonged to another with whom he did not choose to deal. Also, in School Notre v. Kusnitt, 125 Md. 323, it was shown that the buyer of merchandise was misled by the seller's agent to believe that it was dealing with the Goodyear Rubber Company, when in fact the seller was an individual doing business

as Goodyear Hospital Rubber Company. This court held that there was no valid contract, because there was no implied or expressed assent by the buyer to transact business with the latter company.



And in Cundy v. Lindsay, 3 L. R. App. Cas. 459, and also in Owens Mfg. Company, 145 Minn. 199. these higher courts held that title to merchandise does not pass where the testimony shows that the purchaser did not realize or know who was the real seller.

Therefore, it is quite apparent that under ordinary circumstances a contract for sale of merchandise is not valid and enforceable when the testimony proves that the purchaser believed he was transacting business with one when, in fact, another was the seller.

On the other hand, let us assume that a seller's agent approaches a purchaser and presents an offer which the purchaser unconditionally accepts without inquiring who the agent represents. Then, under these circumstances, a valid contract is completed if the quality, quantity, price and delivery date was mutally agreed upon between the purchaser and the agent.

It is not necessary that date of payment, nor terms, shall be specified because in absence of these stipulations the court will assume that cash on delivery was implied by both the buyer and seller.

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He's the new Vice President in charge of Know-How

## Ways to Materials Handling Efficiency

Navy experts develop new pallet design accessible for handling from any side or from corners, promoting flexibility in loading and stowage, maneuverability in narrow aisles, and space economies

By LIEUT. (jg) NORMAN HILTON, USNR

Naval Ordnance Materials Handling Laboratory

Hingham, Mass.

A MATERIALS handling milestone, the eight-way pallet used by the U. S. Navy's Bureau of Ordnance, affords four basic handling advantages effective in all phases of palletized operations.

Accessible from any side or corner, this new laboratory-tested piece of handling equipment is a highly significant variation on the fork-truck-pallet theme. Many of the most universal problems of materials handling are eliminated because of the wide application of its four primary advantages: versatility in handling, flexibility of stowage arrangements (with rectangular pallets), reduction of aisle space required, and strengthening of unit loads

(1) An eight-way pallet set down from one direction may be picked up from another, so that removal of unit loads need not be a reversal of the placement process. For general handling this means easy maneuverability in confined spaces such as are commonly found at the end of production lines, in crowded aisles, or on narrow loading platforms. The feature is especially valuable in warehouses with a rapid turnover where the position of the aisles fluc-



By use of two-way strapping, unit loads formed on steel eight-way pallets have proved so strong that they can be suspended upside down in mid air without showing any signs of failure.

tuates and where stows are apt to be buried unless they are accessible from more than one side. It is also useful in lighter loading and shiploading because it eliminates the perplexing question of which way to face the stringers in each section of the hold.

Carloading is facilitated by the eight-way feature. Flat cars (and open highway trailers) can be loaded or unloaded from any direction by equipment on either ground level or platform level, an advantage which becomes important if the cars (or trailers) are used in a congested area. When box cars are being loaded with such items as ammunition in tanks, which often require that all the units face the same

way, it is handy to be able to set pallets fore and aft into the door area without need for dunnage on the deck. Also, when a fork truck on ground level is feeding loads to a hand lift truck in the car, the hand truck can run them directly into position without having to turn around.

(2) Eight-way entry enables rectangular pallets to be used in a variety of stowage patterns that would be impossible if all the pallets had to be facing the same way. This feature can be a real space saver in warehouses having structural disadvantages such as columns, alcoves, and the like. For example, if columns are 15' apart center to center, it is impractical to stow more than

Laboratory tests show advantages of eight-way pallets in handling leads on narrow platforms and through narrow doors without turning load; for complete utilization of storage space; in loading flat cars or open trailers from platform or ground level; in narrow aisles; and for approaching loads from either direction.

three standard Navy 35" x 451/2" pallets of the two-way design between them, and nearly 4' of space is wasted. However, three eightway pallets can be placed the wide way and one the narrow way. In irregularly shaped warehouses with alcoves or bays, similar combinations can frequently be used to accommodate a greater number of loads than could be stowed with two-way pallets. Also, it may be convenient to pick up such pallets from the narrow side and take them through spaces too small for regular pallets whose stringers run the short way. In shiploading the variety of patterns made possible often permits unit loads to be stowed in spots that would otherwise have to be filled with loose cargo.

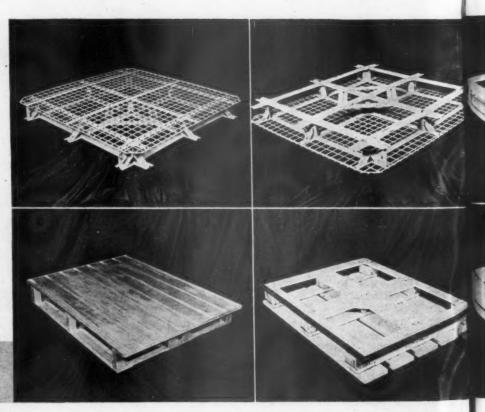
Important is the new range of carloading patterns that have developed. Eight-way pallets of the x 45½" size will fit into a freight car either two abreast the 451/2" way. The latter condition requires a freight car 9'-2" wide and a pallet load with an overlap of not more than ½". As a result, car capacity may be utilized more completely than was previously possible with this size of pallet. If the unit loads have no overlap, as many as ninety-three will fit into a standard 40'-6" freight car so snugly that virtually no bracing will be required. Even with 1-3/8" of overlap on each of the 35" sides, eighty-even loads can be put into a car.

By permitting 35" x 45½" pallets to be handled from either side, the eight-way feature has made important contributions to truckloading. Two units can be set into the truck the narrow way or one the wide and one the narrow, making possible many different loading arrangements.

(3) Less handling space is required because a fork truck need make only a half turn from an aisle







Eight-way pallets were thoroughly tested in a wide variety of design, materials, and construction.

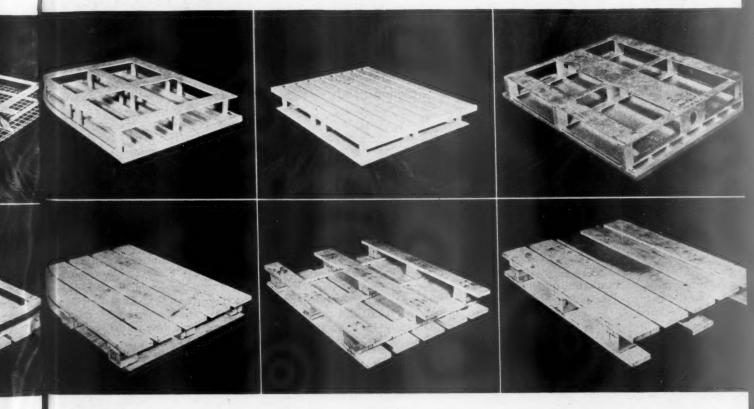


to enter the corner of an eight-way pallet. Consequently, in place of the 12' to 14' aisle required for a 4000 pound capacity fork truck handling two-way standard Navy 48" x 48" pallets, 7' is ample provided that there are cross aisles of the same width to expose the corners of some of the pallets. Where cross aisles are not desired, eight-way pallets can be handled from an 8' aisle provided there are occasional 4' gaps in the stowage to permit corner entry. After one row has been removed there will be a regular 12' aisle.

The value of corner entry is greatly increased if a fork truck can come in from a wide variety of angles. Three factors govern its ability to do so: narrow forks, slender vertical supports in the pallet, and wide clearance between the vertical supports. Under proper conditions a skillful operator can find many uses for this eight-way feature.

(4) Stronger unit loads are possible with eight-way pallets, since material can easily be bound to them by athwartships straps as well as by fore and aft straps. Good athwartships strapping may eliminate the need for swaybracing in freight cars, simplifying loading and unloading operations. In ships, where units are apt to receive rough handling and are always subject to considerable lateral stress as the vessel rolls, this added strength is a welcome

(Continued on page 360)



Остовек, 1945

ASING



## SURPLUS Seeks A Market

DURING the next several months the Government will make an intensive effort to dispose of as large a volume of surplus as possible, on the premise that sales at this time will not displace new manufactures on the market.

There is an acute consciousness on the part of Government surplus disposal agencies' officials that it would be futile to talk, on the other hand, of full employment, while at the same time creating a strong competitive factor through dumping of surplus. However, the physical volume of surplus goods is great, and some method of handling it quickly is needed.

### Scope of the Problem

One of the basic problems is the uncertainty from month to month as to the nature of surplus which is to be declared. The agencies which own surplus material are in no position to forecast accurately the types of surplus they will declare, and this makes the aggregate total still more uncertain.

The most definite indication is

Government must find an answer for its postwar surplus headache within six months to avoid conflicting with new production for civilian needs

that surpluses will be declared in all types of machines, materials and goods used by the military during the war. The big question mark is the quantity of surpluses in each classification and category.

The normal demands of the civilian consumer can absorb any moderate quantity of goods of a specific type without an appreciable defection in the normal buying power. The problem is to keep the release of consumer goods in some balance, so as not to create glut on a particular market, and still to move out as much goods as possible while dealer shelves are still bare and consumer demand still sharp.

There is a general feeling of confidence on the part of agencies which

are handling surplus. Largely this optimism stems from the feeling that the vast bulk of surplus, both in dollar cost to the Government and in physical bulk, consists of planes and aviation parts—and that this will ultimately be scrapped.

Discounting airplanes as a surplus problem, there remains a still mountainous but comparatively lesser residue. The remainder is merchandisable, and does not pose the handling problem that arises in aircraft surpluses. With consumer demand at an unprecedented peak. and with industry still in the process of converting, and therefore unable to fill this consumer demand. Government faces little resistance to its sales efforts during the next six months. At the end of this brief honeymoon, the problems will begin. When Government sales begin to encroach on the operation of a fully converted industry, a further policy decision will have to be made.

It now appears likely that Government will hobble its sales efforts in favor of new civilian production, rather than compete actively for ci-



Acres of special parts pose a serious surplus problem

vilian markets. Actually, Government surplus officials are anticipating future restrictions on surplus sales by currently intensifying sales

## Surplus Plants and Equipment

The disposal of Governmentowned plants either by sale or by lease is a distinct problem, and the Reconstruction Finance Corporation is actively seeking to make deals on all the plants which have been declared surplus. The RFC approach is primarily that of making a deal for each plant, that will give maximum employment and at the same time be in accord with standard commercial plant selling or leasing practices.

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Surplus war plants will in many cases be sold or leased to the wartime occupants of the plants, as these occupants have a prior knowledge of the facilities, and have the advantage of being a going concern.

Plants available for sale or lease are being advertised, and RFC operates 31 Disposing Agencies in the field with considerable autonomy in negotiating sales. In addition, a number of display rooms and sales outlets are being established throughout the country.

## RFC Program

The basic outline of the RFC merchandising program for both property and equipment, as suggested by RFC to prospective purchasers, is as follows:

1. All property declared surplus to RFC and available for sale by it, is inspected, appraised and catalogued.

## COMMODITY GROUPS

### ESTABLISHED BY COMMERCE DEPARTMENT FOR SURPLUS DISPOSAL

### I. MACHINERY DIVISION

- Heavy Construction Machinery Branch
   Light Construction Machinery Branch
   Industrial, Mining and Oil Well Machinery Branch
   Farm Machinery Branch
   Machinery Parts Branch

## II. MOTOR VEHICLES DIVISION

- 1. Motor Vehicles Branch
  - a. Vehicles
  - b. Trailers
  - c. Motorcycles
- 2. Tires and Tubes Branch b. Repair Materials

  - a. Tires and Tubes

## III. AUTO PARTS, ACCESSORIES AND EQUIPMENT DIVISION

- 1. Replacement Parts Branch
- Auto Accessories and Assemblies Branch
   Bodies and Cabs Branch
- 4. Auto Maintenance Equipment Branch

### IV. HARDWARE DIVISION

- 1. Mill Supplies and Heavy Hardware Branch
- 2. General Hardware Branch
- 3. Hand Tools Branch
- 4. Housewares Branch
- 5. Farm Supplies and Firearms Branch

## V. PLUMBING, HEATING, AIR CONDITIONING AND

### ELECTRICAL DIVISION

- Plumbing Branch
   Heating Branch
- 3. Air Conditioning and Refrigeration Branch
- 4. Electrical Branch

## VI. GENERAL PRODUCTS DIVISION

- 1. Photographic and Optical Branch
- 2. Containers Branch
- 3. Rubber Goods and Miscellaneous Branch

  - a. Live Animals
    b. Gift Shop Items
    c. Miscellaneous Rubber End Products
- 4. Recreation Branch
- 5. Safety Equipment Branch

## VII. FURNITURE DIVISION

- 1. Office, Industrial and Miscellaneous Furniture and Fixtures Branch
- 2. Household Furniture and Floor Coverings Branch

### VIII. OFFICE MACHINES AND APPLIANCES DIVISION

- 1. Accounting Machinery Branch
- 2. Reproducing Machinery Branch

## IX. PAPER, PRODUCTS AND OFFICE SUPPLIES DIVISION

- 1. Fine Paper Branch
- 2. Coarse Paper Branch
- 3. Office and Engineers' Supplies Branch

## X. MEDICAL AND SURGICAL DIVISION

- 1. Drugs, Medicines, Toiletries and Cosmetics Branch
- 2. Surgical, Professional and Scientific Equipment Branch
- 3. Hospital and Laboratory Equipment and Supplies Branch

## XI. TEXTILE AND WEARING APPAREL DIVISION

- Clothing, Apparel and Accessories Branch
   Textile Fabrics Branch
- 3. Footwear Branch
- 4. Notions, Findings, Trimmings and Miscellaneous **Textile Products Branch**

## XII. RESIDUAL PRODUCTS DIVISION

- 1. Reconversion and Adaptability Branch
- 2. Engineering and Experimental Branch

2. The corporation utilizes an inventory control mechanism by means of which thousands of items on the RFC market list are, and must be, accurately described in acceptable commercial terms. In this terminology translation job—from the military to the commercial—RFC follows "Handbook of Standards for Describing Surplus Property", published for the Surplus Property Board by the War Production Board.

3. Uniform catalogue listings are prepared by all of the 31 RFC Disposing Agencies. These catalogue listings are mailed to persons inter-

posing Agencies, and, whenever the supply and the market are broad enough, such offerings are advertised and publicized on a nationwide basis. You, as a buyer, may place an order for RFC-handled surpluses whether offered for sale in your vicinity or in a distant RFC Agency's region.

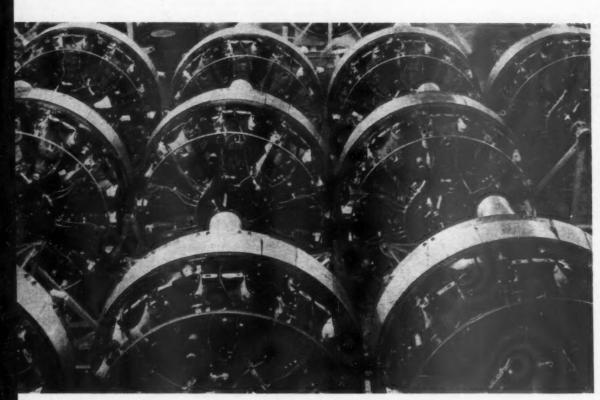
5. All items offered by RFC are priced realistically and fairly, on a price-tag basis whenever feasible, and all items are sold on a warranty basis as to description.

The overall RFC policy has been largely to sell direct to the consumer wherever possible.

a prorated basis.

The estimates of the potential amount of consumer goods which will be declared surplus vary from five to seven billion dollars. The nature of these goods can be estimated by the Commodity Groups established by the Commerce Department, as listed herewith.

One of the disturbing facets of the Surplus Disposal Act has been the numerous priorities in sales which are prescribed under the law. Government agencies are given priorities; States and municipalities are given preference; veterans get a first chance at the surpluses.



Aircraft surplus is headed for rapid obsolescense

ested in acquiring RFC-handled surpluses. Notify RFC as to which of the general types of RFC-handled property you want and your name and address will be placed on the mailing list to receive listings issued by the Agency serving your territory. If you have an immediate need for certain commodities, be sure also to list the specific items and quantities you want, describing them in commercial terms and using customary trade specifications and descriptions ordinarily used by you in purchasing.

4. RFC offerings are made regionally by all of the 31 RFC Dis-

The Department of Commerce, which is disposing mainly of surpluses of a consumer goods nature, is committed to disposal of surpluses through established trade channels.

### Consumer Goods

The Commerce Department is seeking to stabilize the handling of surpluses as much as possible by establishing fixed prices for surplus commodities, rather than putting goods up for auction on a bid basis. Where the demand for a specific commodity is greater than the supply, the goods will be spread around among all the interested buyers on

These priorities, while well-intentioned, have the obvious effect of delaying sales at a time most opportune for immediate marketing.

To comply with what is considered to be the spirit of the law, and still make possible immediate and quick sales, the practice will be to earmark sufficient quantities to meet the estimated demand by those buyers who have been given a purchase priority under the law.

At some future date, Congress will be asked to change the Surplus Disposal Act to adjust for the difficulties which have been experienced under the law as originally enacted.



## CONTACT REGIONAL OFFICES TO PURCHASE DEPARTMENT OF COMMERCE SURPLUSES

REGION 1:

Mr. M. D. Smith
Regional Director
Office of Surplus Property
Department of Commerce
Washington Essex Building
600 Washington Street, Boston 11, Massachusetts

REGION 11:
Colonel Frank L. Seymour New York, New Jersey
Regional Director
Office of Surplus Property
Department of Commerce
350 Fifth Avenue—61st Floor
Empire State Building, New York 1, New York

REGION III:
Mr. John Taggart
Acting Regional Director
Office of Surplus Property
Department of Commerce
Lafayette Building
5th & Chestnut Streets, Philadelphia, Pennsylvania

REGION IV:

Mr. Rowland D. Schell
Regional Director
Office of Surplus Property
Department of Commerce
704 Race Street, Cincinnati 2, Ohio

REGION V:
Mr. F. A. Mapes
Acting Regional Director
Office of Surplus Property
Department of Commerce
209 South LaSalle Street, Chicago 4, Illinois

REGION VI:
Mr. H. E. Harman, Jr.
Acting Regional Director
Office of Surplus Property
Department of Commerce
105 Pryor Street, N. E., Atlanta 3, Georgia

REGION VII:

Mr. Hamilton Morton
Regional Director
Office of Surplus Property
Department of Commerce
609 Neil P. Anderson Building, Fort Worth 2, Texas

REGION VIII:
Mr. Harry Easley
Regional Director
Office of Surplus Property
2605 Walnut Street, Kansas City 8, Missouri

REGION IX:
Mr. John F. Hough
Acting Regional Director
Office of Surplus Property
Department of Commerce
1030 15th Street, 7th Floor, Denver 2, Colorado

REGION X:
Mr. Leland C. Dedo
California, Arizona, Nevada
Regional Director
Office of Surplus Property
30 Van Ness Avenue, San Francisco 2, California

REGION XI:
Mr. Orrin C. Bradeen
Regional Director
Office of Surplus Property
2005 Fifth Avenue, Seattle 1, Washington

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HASING



## Salesman of the Future

GENERAL ELECTRIC executive once said that a good salesman was a customer's representative on the company's payroll and that he was capable of serving both sides adequately. This might sound as if a capable salesman was a kind of fence-sitter or that he could carry water on both shoulders while talking out of both sides of his mouth simultaneously. Actually, a good salesman is the customer's representative and he is also on the company payroll. What will he have to be in the future? It is best to examine him and find out what he is today, analyze his prin-. cipal functions, and see if we can arrive at what he should be tomorrow.

Let it be understood that there are no "natural born" salesmen. Competent salesmen are trained. He may be born with certain attributes and endowments, but unless he is trained he may turn out to be most anything, unless he is properly trained to understand the sales function he may be more of a liability than an asset. It takes more than "personality" to make a salesman and although certain personal good qualities are necessary, salesmanship is based on tried and proved

By FRED D. MOSHER

principles which are ingrained through training.

During the war years salesmanship has been put to a severe test, and although many do not realize it, new techniques of a lasting nature are being developed. It would be rash to say that salesmanship has been radically changed in recent years, but new relationships have come about which will remain for all time. From an economy of plenty the nation was quickly converted to one in which both buyers and sellers were faced with entirely new problems.

## A Service Function

At no time in our history has industry been so dependent on salesmen as it is today. Purchasing agents have come to look to suppliers' representatives as consultants to turn to for assistance in solving production problems and wide-awake salesmen have been making full use of the opportunity to cement relationships which will pay dividends in the future. Actually many sellers have nothing to sell but an indication of their progressiveness is the fact that

their representatives are making the rounds to render service helpful to clients.

The capable salesman today is spending a considerable portion of his time finding out what his customers' problems are likely to be tomorrow. In many instances the salesman has nothing to offer except advice on how to keep equipment functioning; he is a dispenser of important information on equipment maintenance. In the machine tool industry, for example, until quite recently there simply were no machines to be had. During the most critical period of the machine tool shortage salesmen were busy advising engineers in manufacturing plants on ways and means to keep machines in operation while at the same time increasing production. The forward-looking salesman is taking advantage of such opportunities in many industries.

## First-Hand Knowledge

Critical shortages continue to prevail in dozens of important lines, but the alert salesman is maintaining his contacts with buyers and keeping them informed as fast as conditions improve. Sellers have been in the rider's seat so long that it is easy to fall into bad habits. The Smart salesman is keeping his weather eve open for the days ahead and to this end he is gathering important data and information.

Never before has the seller had such an opportunity to actually get into his buyer's plant and see his

equipment in action.

The salesman who passes up an opportunity to become acquainted with his customers' production problems is not on his toes. Far too many salesmen are paying "courtesy" calls when a visit to production departments would show that opportunities abound which will mean business in the future.

## Unusual Opportunities

The war has brought out many weaknesses in manufacturing plants; these weaknesses have not been corrected simply because needed equipment has not been available. Alert salesmen are learning these things and are improving their standing by making helpful suggestions whereever possible. At the same time such salesmen are looking to the future when the need for cost reduction will be great. New and improved machines and materials will be available and the salesman with the information will be in the best position to render service.

It is short-sightedness on the part of a salesman to forget the fact that above all he must render a service in the field in which he operates. About a year ago an important company in the equipment industry held a sales conference. The purpose of the conference was to impress upon the salesman the importance of keeping up their contacts on the one hand while offering very little to sell

on the other.

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The company was in the process of tooling up for a large order for shipment abroad. It was the management's thought that the domestic business would wait while the export business would not. Various instructions were given to the salesmen and viewpoints were discussed pro and con. One of the salesmen threw a bombshell into the meeting when he reported that he had been hard at work in a territory in which a competitor had had the upper hand for a number of years. A large user of the equipment manufactured by the company was in difficult straits because of labor shortages and had asked that one of the company's machines be installed in one of his plants. The salesman had spent years in trying to crash this particular market, and at a considerable

expenditure of time had gone into the user's plant to offer suggestions.

The management turned down the idea of supplying the equipment with the remark that since this user had not seen fit to place an order in peace time he could stew in his own juice now that conditions had gotten the best of him. The salesman took the position that it had been unfortunate that this user had not purchased the equipment before, but perhaps this would be an opening wedge. The management pointed out that the competitor was in the more favorable position, and to install the equipment now meant robbing some domestic customer who was more deserving.

The salesman then took it upon himself to suggest that he be allowed to ask one of his customers to permit the transfer of a machine to his new prospect. Management thought this was unorthodox procedure but reluctantly agreed. The result of the whole business was that the buver was quite satisfied and greatly appreciated the efforts of the salesman. The user has an expansion program on paper for the future and the salesman is now assured of a substantial portion of the business.

## **Educating Management**

This incident serves to emphasize a point that is most important at this particular time. Salesmen must educate management. Management has gone so long without sales problems that many of those in high places will have to be put back on the right track to prepare them for the future. Management at the present time is almost entirely devoted to production and all the problems incidental to this function. Where plants are on 100% war production top management has little time for anything else. As a result of this many companies are rushing around thinking up "sales training" programs to be put in motion as soon as conditions permit. The mere fact that management is thinking in such terms is a good sign that they have permitted sales technique to go by the board and that the sales end of the business has taken a back seat for the duration. Wherever this situation exists mistakes are found.

A large number of companies. harassed by the loss of key personnel, have brought in salesmen and trained them as "expediters" either in the company's plant or as company representatives with sub-contractors. In some instances these expediters have been given the job of combing

the industry for used equipment. In too many instances these salesmen have acted like fish out of water, and the fact that they were changed from sellers to buyers is ample evidence that all along the line sales organizations have been weakened.

The successful salesman of the future will be the one who has kept his contacts in good shape during the days of critical shortages. He will have to correct many of the mistakes of his management and educate his superiors to new ways of doing business. Rugged individualists in management may have to be shown that the forced cooperation made necessary by the war emer-gency is good business when the pressure is only that of competition. This means that much of the sales "service" should be retained when conditions return to normal. It would be a loss to any company if salesmen were to be "trained" only as sellers of equipment and materials. Live-wire salesmen have instilled in buyers a feeling of confidence that will operate to the benefit of the seller in the future.

Companies short-handed on talent during the past few years have come to rely upon salesmen for important advice and information pertaining to processes and methods. This service has been appreciated and the salesman of the future will capitalize on this. Training of salesmen in the future should emphasize service to clients probably more than starched cuffs and other frills which may be important but not vital.

## **Adjusting Sales Policies**

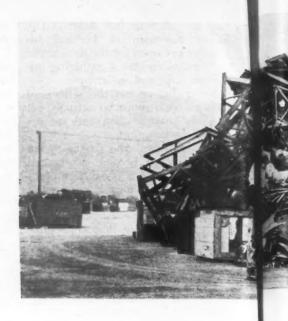
It might be well to consider some of the old rules of salesmenship and add to them some of the newer concepts. For example, it has always been important that the salesman know his product, believe in it, and be in a position to make capital of its outstanding features. To this should be added the idea of knowing the customers' products. This has been a necessity during the war for those salesmen who were faced with selling little but good-will and service. Problems never before faced by industry in this country will come about in the transition period between war and peace. This period will not be one in which the sales novice is likely to do a good job for his company unless he is properly trained. In this period many of the buyers will change to sellers overnight. The psychological aspects of the period will not be known, nor would it be safe to make a predic-

(Continued on page 396)

OCTOBER, 1945

## Secondary Uses For Materials

The "string savers" of the AAF have cut millions of dollars from the nation's bill for unavoidable surplus, through a consistent program of reclamation and the search for secondary applications



DERHAPS you are among those who are genuinely shocked at the surplus materials account accumulated in the Air Forces supply program during the war. And perhaps you have unmercifully ribbed the philosophy of the string-savers and paper-box-putter-awayers before the war. Then pause for a moment while we put these two things together and review the quiet, unspectacular, but highly effective work of the Disposal Section, Air Technical Service Command, with headquarters at Wright Field, Ohio. For these men in uniform and civilian employees have been faced with a terrific problem of potential surplus. And they have found dividends for taxpayers in the don't-throwanything-away philosophy. No obsolete item of aircraft equipment, no beat-up engine part do they consider beneath their notice; somewhere, somehow, they hold, there is a use for it.

Consider warehouse shelves in Los Angeles piled high with obsolete insulation materials used to deaden aircraft noises. These materials were fibers of various kinds, which did their job. However, cotton-like spun glass insulation was developed, and seemed to do the work better. It does not deteriorate and it does not absorb moisture. Our airmen were entitled to the best. Production of the spun glass rendered the earlier fibers useless for the purpose for which they were originally procured. What to do?

Disposal officers of the Western District, ATSC, found the answer. Being up-to-date string savers, it hurt them to think of junking these

perfectly adequate insulation ma-Selling them on the open market would have brought about one-twentieth of their original cost to the government. So they looked around for some other means of utilization. They discovered that efficiency at air bases in the California desert was being impaired from the terrific heat. The Fourth Air Force, which had supervision of these bases, happened to be looking for a solution to the problem at that very moment. The insulating materials were baled up, loaded on freight cars, and shipped to the air fields. Carpenters soon were using them to insulate control towers, schools where student pilots were receiving instruction, and other buillings. Not only was the Fourth Air Force's problem solved, but the cost to the taxpayer of purchase of new insulation materials was saved, and an unnecessary burden on our production capacity eliminated.

Making a secondary use of materials no longer suitable for their original use is an important role for Air Technical Service Command, whose primary mission is the development, procurement, maintenance, and supply of AAF property of every description. ATSC stocks 650,000 items of issue. For many reasons some of them have lost their original usefulness. Technological improvements, as in the case of the anti-noise insulation, rendered vast quantities of supplies obsolete. Changes in the scene of combat had the same effect; for example, much cold weather equipment procured against the possibility of a largescale Jap thrust into Alaska, and

considerable stock obtained for use in North African desert warfare, are no longer required. Furthermore, mistakes in procurement were in-evitable. When AAF expansion began in 1940 and 1941, there was no experience to guide us, no way of forecasting what the mortality of B-17 wing surfaces would be, or how much aluminum tubing for engines would be needed, or how many zippers for flying suits we would have to have. Our planes had had various tests in domestic proving grounds, but they had not been put through the ultimate test of combat. Nobody knew how they would stand up, or what changes would be indicated by the trial of battle. All these things have caused

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Miscellaneous products destined for diversion to new uses. The fan assemblies will be rebuilt as water heaters or ventilator coolers; the plane-to-tower signal lamp becomes a spotlight; bombardier cushions will be remade to standard design.



End of the trail. Propellers, frames and engine parts that have given the full measure of service find their way into the scrap heap. A quarter-million dollars' worth of metal has been salvaged annually at the San Bernardino base alone. overages of various kinds to pile up. A job undertaken by ATSC is to find out the best possible substitute use for these overages. Here's how it works. In the early days of the war, grave shortages of aluminum and steel confronted the men planning our defense against Nazi and Japanese aggression. Wooden planes looked like the answer, and, accordingly, the AAF let contracts for the construction of several models, including the YC-76, an all-wood job, sometimes referred to as the "Spruce Goose" and the "Flying Woodpecker." The YC-76 was rushed to completion in Capt. D. R. Boisseau (right), Property Disposal Officer, Western Procurement District, ATSC, about a year, three times faster than the normal period required for deexamines obsolete and excess aircraft ma-(Continued on page 374) terials that have little or no value on the

Photos by Air Service Technical Command

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The disassembly of war-weary planes works in exact reverse of a factory assembly line. By this process, millions of dollars in reusable parts have been salvaged for maintenance, combat and training purposes instead of being scrapped.

Thousands of gallons of solvent, used to clean aircraft parts, are reclaimed in this solvent still at the San Bernardino ATSC base. A vapor process, with accurate heat control separates impurities and dirt, and the solvent is used over and over again.



open market, but can save millions of supply and maintenance dollars by reapplication WHILE old J. B. Ackroyd was alive and in the saddle, Mr. James Anderson, known to his intimates as Pop, never bothered his head about salary. His stipend as Director of Purchases wasn't large, but J. B. was a great believer in passing out checks in recognition of special jobs well done, and frequently the checks were of a healthy size. Anderson had really made quite a lot of money, for his was an original mind and he employed it well in pulling off a special deal now and again that showed the Ackroyd Company a handsome profit, and J. B. always made his ante good. So it happened that neither of them gave much thought to salaries as such. Pop had a comfortable sum put by and could have retired any time to take up the serious pursuits of golf and fishing. But he didn't care to retire; he liked his job and kept his mind ranging out ahead of the business to keep track of what was happening, and what was likely to happen in the future.

## New Blood

But the time came when old J. B. was gathered to his fathers, and young J. B. shinned up into the driver's seat. The old man had put his son over the jumps and he was really a capable fellow. But he had somehow got a captain-of-industry complex, and thought more of rules and regulations than he did of people and psychology. He was keen to show that he could play any instrument in the band. However, he lacked his old man's flair for picking the right people and trusting them to the limit, which wasn't too good for the personnel of the place. When one of the old fellows retired on J. B.'s liberal pension plan. which the old man had fixed so it couldn't be tampered with, young J. B. thought it smart to disregard deserved promotions and hire men he considered gogetters, live wires, proceeding thereafter to play each one on the end of a string. When the old man was satisfied a subordinate could be trusted, he trusted him all the way and forgot his few inevitable mistakes. Therefore the bunch trusted the old man. If he bawled hell out of a fellow for something, neither bore any grudges; and he had a crew that schemed and hustled for him all the way.

But young J. B. couldn't connect any of his live wires with Pop Anderson's crew. That gentleman took care of his own and would have no interference. On the few occasions when young J. B. took a

## A Matter of Moolah

A purchasing agent, accustomed to dealing in values, considers the value of a loyal organization and executive morale

By CHARLES FORD

notion he ought to do something about it, he was quietly and effectively squelched. It rankled; and for that and other reasons the fountain of bonuses dried up, not only for the purchasing department but for others. Pop Anderson found himself with only the nominal salary he had drawn for years.

## Ultimatum

So, realizing the situation, the purchasing head of the J. B. Ackroyd Company went into executive session with himself, figured out his average income from the business for ten years back, and pleasantly but firmly told the boss that his compensation from now on would be so much. He didn't say "or else": he just told Mr. Ackroyd that was the way it was going to be.

It rather put the boss on the spot. He didn't dare fire Pop; he knew the board of directors would ask embarrassing questions, for they were directors who directed, and Mr. James Anderson was one of them. They liked him and trusted him, and would go to bat for him if necessary. However, Anderson didn't care to be defended; he was used to rolling his own and intended to keep on that way.

So, he decided it was time someone took a fall out of the boss, and that he would do it himself. It didn't matter that he was vulnerable because his purchasing organization was trained to get along without him for indefinite periods as long as J. B. didn't try to tie strings to it in Pop's absence. When Anderson quietly but firmly told the young man what was going to happen, the boss tried argument, pulled the loyalty stop, tried to point out that earnings were too low in proportion to capital and couldn't be increased, that expenses were terrific; and besides, Pop had all the money he needed anyhow. It was really quite a performance, except that young J. B. overdid it.

Pop listened quietly, blowing smoke rings from his cigar, until he thought things had gone far enough. Then: "I think that will do, Jack." Young J. B. insisted upon being Mr. Ackroyd to the rest, but it hadn't taken with Pop.

## Unfinished Business

"When you say that I have been well paid, that I have enough money to satisfy most people, and that I don't need an increase, you are quite correct. But the money I may or may not have is none of your business; it has been honestly earned and is mine. When I call attention to the fact that I am still receiving only a nominal salary, that for years it has been made up by bonus money until your father died, and that you have seen fit to discontinue paying bonuses throughout the place where your father would have considered they were earned and the company could well afford them. I am simply giving you a chance to make good an injustice. You can't have it both ways; if you discontinue bonuses you will have to increase salaries unless you want your organization demoralized. I may be able to afford



the reduction; that, as I said, is strictly none of your business. Several of the other executives are hard hit, and, one way or another, you will have to pay them or lose them.

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"Your father understood that perfectly well; and I happen to know that he intended, before his death, to make some provision for settling the matter permanently. He knew the men trusted him; but he wasn't too sure that his policy would be continued under some one else. He did me the honor to discuss the whole thing fully with me several years ago, and I committed his plan to writing. I know exactly what he meant to do, but don't know why he never got to doing it.

"The board meets next Monday. I shall attend that meeting, lay Mr. Ackroyd's plan before the directors and move its adoption. Furthermore, I know damned well it will be adopted. So much for that.

## Plain Talk

"Now, for the good of your soul and right here between ourselves I'm going to tell you what I think of you; you can take it or leave it. You have a great deal of your father's ability; the business at present is running well, and the earnings are good. How long they will stay that way nobody knows. You distinctly lack the old man's ability to pick men and trust them, and reward their performance; and you apparently haven't realized that the success of the Ackroyd business hinged on that one thing more than on anything else. Your ideas about per-

sonnel are slowly undermining the morale of the whole outfit. J. B. could cuss a man from his bald spot to his bootsoles and hold his loyalty and interest. You can't. Every time vou criticize somebody vou leave a scar. Those scars are multiplying. and your men are beginning to put their heads together and talk about things in a way that has no place in a house like this. Ackroyd's is a first-class business. It is doing fifty millions a year and can better that. The unions came in during your father's time, but he knew how to handle them and we never had a strike. Just now, with a wave of strikes all over the country, you don't know when some of these birds will try to jump Ackroyd's. There is talk going about that can't be suppressed by ordinary means.

Young J. B. burst out: "And I suppose you think readjusting your pay will mend matters."

"It might have an influence if you don't stop there, but that isn't the point. You are going to do the fair thing by me just as a starter. Then you are going to do the same by the rest because you can't do it for me and ignore the others. And you are going to do it in such a way as to reassure the men who have been harmed.

"Just now, Ackroyd's can get along a lot better without you than it can without the able and seasoned organization the old man built up. As long as your father was alive, nothing could have induced me to leave Ackroyd's; just at present I don't much care, except that I'm sticking for the sake of doing some boy scout deeds for the rest. You may or may not know it, but I have an offer in writing from your principal competitor for just about double my average earnings here for the last ten years. Or, I have capital enough to organize and carry on a snug little business of my own if I want it that way. I'm in damned good shape to be a martyr for the cause, but I'm going to stick for the good of a business I have been with since I left college.

"That may sound like conceit to you. But it ain't. Ackroyd's has a damned good purchasing department as you well know, and as long as I am here it isn't going to be disturbed. You have your father's record to look back on, and if you can't learn to see things as he saw them it's going to be just too bad."

## Show-Down

Right here Pop proceeded to outline the plan J. B. didn't live to put in force. It was simple: a block of stock to be set aside, the income from which was to be used as a profit-sharing device for the executive staff. It was to serve the double purpose of keeping the men on their toes to make the stock earn money enough, and to make them feel that their future was tied up with the well-being and progress of the company. Old J. B. had seriously thought of extending it to the working force, but felt it wouldn't be popular. The average workman Continued on page 398

## The Profit of

## RETROSPECTION

By GREY LESLIE

T it a salutary mental exercise to occasionally back away from one's current and absorbing occupation long enough and leisurely enough to examine some aspects of history. If intelligently approached, it can be a genuine re-creation, merging easily into an enjoyable recreation and may provide a new viewpoint promising inestimable benefits.

Purchasing Agents are notorious for working away at their jobs with insect-like assiduity and too seldom transcending their professional avocation to look back over the shoulder or forward to new paths ahead. History holds many lessons for us, and renewing our memory of them need not be a chore if a reasonable selec-

tivity is adopted.

Notwithstanding the justifiable pride and comfortable satisfactions offered by recent astounding accomplishments in planning, procure-ment and production, for war and peace, mankind's progress has been a rather dreary and laborious process. We are told by anthropologists and archaeologists that only about eight thousand years ago, man discovered that he could record his thoughts by inscription of marks and drawing pictures on cave walls. His ability to do that indicated his capacity to think, and thus distinguished him from lower animals. His primordial brethren could puzzle out the hieroglyphics and discern a message or an admonition and thus claim a similar distinction.

Man existed for eight thousand years after that before he acquired an even elementary knowledge of sound waves, which a common bat, a mammal not too highly placed in its own kingdom, possessed as an instinct for its own preservation. Out of that knowledge came super-

sonics.

It has been recorded that ancient and once powerful dynasties collapsed because they lacked the ingenuity to design a horse collar for The atomic age, like the machine age, is one stage in an age-long process of evolution and striving toward new standards of living and achievement

Imagination and resourcefulness find answers for problems without precedent

the full utilization of animal power. Many artifacts of these periods depicting chariots and other horse-drawn vehicles show the animals leaping and straining to get momentum in order to prevent strangulation.

Through a long dark period of over two thousand years mankind appears to have plodded wearily along, until about the year 1800 it seemed to have been belatedly discovered that the exploitation of nature's treasures was a more permanently satisfactory and a more immediately profitable occupation than the spasmodic butchery and recurrent exploitation of one's fellowmen.

There followed a succession of revolutionary inventions in amazing rapidity which seemed to presage the arrival of the millenium. perfection of the steam engine alone cut deeply through all strata of life and had an incalculable impact upon what were formerly considered basic facts of human existence. With the utilization of steam came the intense search for coal and iron. That search led inevitably to the invention of the modern methods of steel making which we now associate with the names of Bessemer, Siemens, Carnegie, Gilchrist, Krupp and others.

The need for a greater volume and wider variety of raw materials and finished products must have been as formidable a challenge to a Purchasing Agent then as it developed later. The steam engine prompted Ericson to invent his

screw propeller, Fulton his steam boat, and Stephenson his locomotives. All of them made it possible to push back further and further not only geographical frontiers but the frontiers of thinking as well. The spirit of invention, by its denial of the attitudes and processes of primitive and medieval repetition, was the chief source of innovation in modern culture as it still is. New thinking stimulated and fostered still more ideas, new necessities, new inventions, new methods, all resulting in an elevation of living standards and lightening man's burdens generally.

Of course there were scoffers and pessimists, doom-shouters and diehards but I would be reluctant to believe that there were many of what we now call Purchasing Agents in that benighted company of skeptics and peerers at Fulton's steamboat or Whitney's cotton gin or McCormack's reaper, because each new invention presented a challenge to the imagination and resourcefulness of men who welcomed the responsibility of finding the materials necessary

for manufacture.

The inventions of the 19th Century and their effect on mankind's entire pattern of life would make a fascinating and dramatic story. In our short life-time in the 20th Century there has been a constant flow of inventions which in their turn have lifted men to heights undreamed of in the 19th Century, when it was felt that the limits of

(Continued on page 400)



# Purchasing Cooperatives Face A Crisis

By H. H. SLAWSON

C ENTRALIZED purchasing on the cooperative plan has become so much an accepted feature of modern merchandising methods that the vociferous campaign currently in progress which centers around cooperatives owned and controlled by farmers warrants more

than passing attention.

An energetic attempt is being made by the propaganda route to convince thinking business men that the cooperatives should be outlawed, chiefly because, as it claimed, the co-ops do not pay a federal corpora-tion income tax. The merits of that charge, which affects retailer-owned purchasing cooperatives, as well as those of the farmers, will be examined later. This controversy boils down to a fight between competitors. Much heat has been engendered, but an attempt will be made here to keynote this discussion to a thoughtful word emanating from the Agriculture-Industry Committee of the Illinois State Chamber of Commerce.

"Most people," says a brochure issued by this committee, "want to be fair in their judgment of others. But opinions often are based purely

Tax controversy emphasizes cleavage between commercial and agricultural interests. Does cooperative buying constitute unfair competition?

on hearsay. The great variety of problems facing agriculture, commerce, finance and industry, often result in ready acceptance by many people of misinformation concerning the other man's problems. This misunderstanding leads to distrust of motives and the building up of arguments to offset something that does not exist."

By getting around a common table and staying there long enough to hear the whole story, the Illinois Chamber committee maintains, the cleavage between rural and urban business which is threatened by this "tax equality" fight can be averted. How this commendable contention is implemented in Illinois need not be gone into here. As an "adventure in understanding" it is, however, getting results worthy of close study by all business men.

No one knows just when group purchasing on a systematic plan came into being among farmers. The practice undoubtedly had its remote roots back in frontier days when trading centers were few and far between. Going to town a hundred miles away, perhaps through Indian-infested territory, was not a matter of easy or casual accomplishment with an ox-team. When accordingly, some hardy pioneer set out from his wilderness cabin to do his shopping at the distant crossroads settlement, the good neighbor spirit led him to run a few errands for the farmer in the cabin down the road. Returning home, he brought not only his own year's supply of sugar, salt and calico, but, perhaps, the requirements of the whole countryside as well.

Moving on with history, evidence

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has come to light indicating that formal "buying clubs" were in operation among Illinois farmers prior to 1850.

Today these early ventures have blossomed into cooperative purchasing agencies, owned and controlled by thousands of farmers, scattered over many states, for whom millions of dollars of farm production supplies are annually purchased on a cost-of-doing-business basis. And in the cities other thousands of working people are also serving themselves through their consumer coops, whose stocks come to them through central purchasing organizations comparable in the scope of their operations to those which the farmers have created. Later still, in the natural course of evolution, the idea has spread into the commercial world, where adoption of the cooperative plan of centralized purchasing is making rapid advance.

## L A Billion-Dollar Business

Statistics regarding the urban workers' cooperatives are sketchy and far from all-inclusive. Those covering the farmer enterprises have, however, been compiled with great detail by government authorities.

Latest tabulations from this source show that in 1944 farmer cooperatives of both the marketing and purchasing type, and numbering 10,300, did an aggregate business of \$5,160,000,000. Some coops, primarily interested in marketing farm products, also performed a small purchasing service for their members, while purchasing co-ops did some marketing business as a sideline accommodation to patrons. Making the proper statistical adjustments, the Farm Credit Administration states that the cooperative purchasing business done by these farmer organizations in 1944 approximated \$1,010,000,000.

This service was furnished, not for all of the nation's 6,800,000 farmers but for only approximately half that number who had access to cooperative services that fitted advantageously into their operations.

Striking variations exist in the size and scope of these purchasing ventures. Newark Farmers Grain Cooperative, in Kendall county, Illinois, for instance, in 1944 marketed 754,836 bushels of grain for its members and bought for them \$62,000 worth of seed, salt, fencing and coal. Cooperative Grange-League-Federation Exchange, Inc., popularly known as "GLF," whose operations cover New York state and portions of Pennsylvania and

## 1944 ACTIVITIES OF COOPERATIVE GRANGE - LEAGUE - FEDERATION EXCHANGE, INC.

(largest of the farm cooperativ	es)	\$101,407,000
Wholesale purchases of farm supplies		
Sales of farm produce		15,736,000
Feed mills	3	
Seed plants	5	
Fertilizer and chemical plants	11	
Lumber and basket plants	2	
Total manufacturing and processing plants		21
Distribution warehouses	7	
Local service stores	189	
Agent-buyers	420	
Bulk petroleum plants	44	
Total distribution outlets		651

New Jersey, did, on the other hand, a total business of \$117,143,000 in 1944. Of this, \$101,407,000 was in wholesale purchasing of farm supplies for patrons, and the rest—\$15,736,000—represents sales of farm produce for them. All figures reflect wartime prices and demand but, even after discounting for this factor, these ventures and multitudes of others like them, deserve recognition as truly "big business".

## Forced Into Manufacturing

Fundamentally, the farmer's primary interest is in farming and, under normal conditions, most of them would be willing to leave business operations for business men to handle. This principle was well expressed by a farmer, one of many who appeared as witnesses at hearings of the House Committee on Small Business early this spring. "Cooperatives," he said, "do not come into existence when private profit business is doing a satisfactory job. Cooperatives appear when margins are too wide or when service is inadequate or inefficient. Then the only alternative is for producers to organize."

Fertilizer plays a tremendous part in farm operations, and the story of how farmer cooperatives got into the fertilizer business for themselves well illustrates this farmer's assertion. To produce the crops which feed the nation—and now the world—fertilizer is as essential as iron ore to the steel industry. Farmers annually spend millions of dollars for this plant food. But for uncounted years they were forced to purchase by the trainload the sand and peanut shells with which short-sighted

commercial manufacturers adulterated their products. In desperation the farmers decided to make their fertilizer themselves, and today some of the cooperative fertilizer mills owned and operated by farmers as auxiliaries of their purchasing agencies are ranged among the nation's largest and most efficient. Commercial manufacturers at first complained loudly that this invasion of their field would ruin them, but they are now selling more fertilizer than ever before and still the demand cannot be filled. ope

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From Boone county, Iowa, comes another, more recent instance of how farmers took charge of their own destiny when commercial interests failed them. Due to OPA pricing policies, manufacturers were forced to discontinue production of soybean cake for stock food, a not uncommon experience in many lines in the recent past. But the farmers could not stand around and let their cattle starve to death. They were pledged to maximum production in the "Food Fights For Freedom" program and, since there was just one thing to do, they did it. At Eagle Grove, Ia., they organized the Boone Valley Cooperative Soybean Processing Association, somehow dug up the necessary equipment and started making their soy cake themselves. It was a remarkable demonstration of the same sturdy. self-reliant spirit with which American farmers have tackled their problems since the days of Plymouth Rock, and the achievement deserves to rank high in the record of agriculture's contributions to the war

Recognized as the largest of its kind in the United States conducted by farmers, the GLF purchasing cooperative, previously referred to, was organized in 1920 to provide a buying service for farm supplies required by members of the New York State Grange, the Dairymen's League Cooperative Association. Inc., and the New York State Farm Bureau Federation. Operations cover the three-state area, mentioned earlier, which constitute the New York City milk shed. Owned and controlled exclusively by farmers, this organization operates twentyone manufacturing and processing plants, including three feed mills, five seed plants, eleven fertilizer and chemical plants and two lumber and basket plants, all of whose products are essential to farm operations of members served.

## **GLF** Operations

Also owned by this cooperative are seven warehouses, located at Owego, Albany, Caledonia, Canton, Oneida and Port Jervis in New York state, and at Warren, Pa. From these strategic distribution points a fleet of tractors and trailers operates to distribute the commodities handled to the 653 area and local service outlets in the GLF organization. Included are 189 service stores, 420 agent-buyers with franchises to handle GLF lines, and forty-four bulk petroleum plants.

Of particular interest to readers of Purchasing is the perpetual inventory and central re-order system which is maintained at the Ithaca, N. Y., headquarters of Cooperative GLF Farm Supplies. Instead of being forced to keep track of seven widely separated warehouses individually, the buyer can determine from his Ithaca office all needs of each unit in the association. This method, the management points out, provides one point of contact for buyers and has been found particularly advantageous in times of short supply when replenishments are available only for limited periods.

Indicative of the up-to-date outlook of its farmer management, GLF erected at Oswego, N. Y., some three years ago, a three-section warehouse which has attracted much interest because of its adoption of the Quonset hut design used by Army and Navy in military supply depots around the world. Commercial warehousemen say it is the first instance of such use outside the military field. This type of structure, the farmers found, greatly reduced construction costs per square foot below costs for the

traditional frame building, and has important advantages in reducing warehouse operating costs.

## What Co-ops Buy

Probably no complete list of commodities handled by farmer purchasing agencies exists. A recent advertisement issued by one of the Pacific coast co-ops lists 88 items as "available now," 43 as "available in limited quantities," and 22 as "later." They range from binder twine and barn brooms to fly spray and sewer pipe, but any list would doubtless vary in other rural areas where other types of farming are conducted.

A study issued by the Farm Credit Administration in 1943, covering seventeen of the major regional farm supply cooperatives, reveals that of the supplies handled in their 1942-43 season by these seventeen, 47.3% of the wholesale volume represented feed for farmers' livestock. Another 22.7% was for petroleum products, and 10% was for fertilizer. Seeds, insecticides, farm machinery and equipment, lumber, packaging materials, electrical equipment, steel products, twine, etc., all being supplies required in production operations, account for another 16% of the year's total volume, leaving only 4% to cover such items as groceries, clothing or other consumer goods which offer competition to rural retailers.

Of the total patrons of these seventeen regional associations, the Farm Credit Administration estimates that 91.5% were farmers and only 8.5% were non-farmers. Over 95% of the supplies distributed were purchased by farmer patrons.

In some quarters considerable effort is being expended to arouse indignation and resentment among business men because farmers are handling their own purchases of this nature themselves. Such an attitude is as unsound as would be that of the retail grocer who might feel that the little baker across the street should buy his flour, sugar and shortening from him. It is as idle as would be that of a taxi driver who might resent the fact that you drive your car down to the office.

## Sound Management

Many people fail to realize that farming is essentially a manufacturing enterprise, requiring vast supplies of raw materials, such as feed, seed and fertilizer, and operational supplies such as oil and gas, insecticides, machinery, packing supplies. The farming industry, too, is broken down into some 6,800,000 units whose individual operators have for years been forced to sell at wholesale and buy at retail, a procedure no other industry of any great magnitude would attempt.

Until the cooperative associations were evolved, individual farmers could not do much about it. But



Individual farm units may be small, but three and a half million of such units, organized for cooperative purchasing, represent a billion-dollar business

now, by grouping together to create marketing and buying organizations. the nation's vast agricultural industry has available what are to all intents and purposes sales and purchasing departments for the individual farmer. They function com-parably to similar departments in any other large business. Through centralized purchasing the cooperatives give their patrons the same cost-reducing advantages of volume buying of standardized commodities, enjoyed, say, by General Motors or International Harvester.

Opponents of the cooperatives have raised the question, "Is manufacturing farming?" With equal propriety they might also ask, "Is making windshield glass proper for a motor car manufacturer?

modernization through group action, of cottage industries-butter or cheese making, for instance-which individual farm families have conducted for ages. Those who protest against this trend place themselves in the position of the wagon makers who sought to halt development of the motor car.

Principally the attack now under way on the cooperatives centers on the charge that they "do not pay taxes." In particular, protests are directed against the clause in the Internal Revenue Code offering the option of corporation income tax exemption to certain farmer cooperatives. In the hearings before Congressman Patman's House Committee on Small Business early this year these charges were quite thoroughly

but they are also liable for corporation income taxes on exactly the same terms as any profit system corporation. The reason their taxes are low is because they serve their patrons at cost or nearly so. If income exceeds costs, the surplus is returned to the patrons as a patronage refund. The constitution legalizes income taxes and the courts have held that refunds to patrons under the terms of a contract are not income. This rule applies equally to cooperatives or corporations, as every business man knows.

The opponents of the cooperatives argue that co-ops should be subject to the corporation income tax before the refund is paid over to the patron. The farmers point out, on the other hand, that the cooperative has no title to these funds. After the refund reaches the farmer-member of the co-op it becomes subject to income tax levy, this procedure being identical to that governing payment of income taxes on partnership businesses.

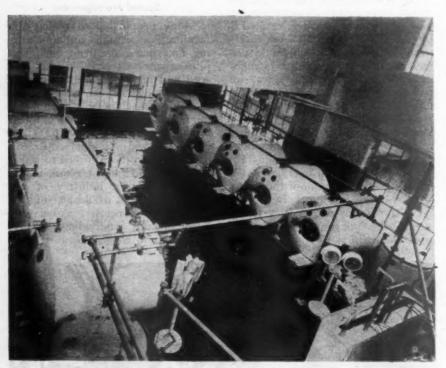
## The Question of Taxes

In view of the growing demand for the lowering of elimination of the corporation income tax on business generally, the ardent campaign at this time to force this tax on the cooperatives seems to the farmers to have ulterior motives. They are somewhat derisive of those who assert that the only way to equalize the competitive position of corporations and cooperatives is to make the farmer associations pay the corporation tax. There are, the farmers point out, 500,000 partnerships and 2,000,000 proprietorships and other business ventures which pay no tax on business income as distinguished from personal income.

There are, on the other hand, 10,300 farmer co-ops to whom the tax exemption is available. If all cooperatives were exempt (which they are not) the ratio between the two groups would be one co-op to 200 other tax-exempt businesses. This, the farmers say, scarcely warrants the claim that to impose the tax on cooperatives would remove an alleged unfair advantage over corporations. The clamor focuses attention on the movement for abolition of the corporation tax on all businesses, and in that light the fight on the farmers may ultimately be of some service.

Purchasing cooperatives, in general, follow the practice of billing patrons at the going price. If the

(Continued on page 384)



The farmer becomes an industrialist. Here is a modern milk processing plant operated by the Dairymen's League Cooperative Association. Capacity: 56,000 pounds per hour

"Is operation of a printing plant" proper for a maker of telephone equipment?"

Throughout the industrial world the trend toward integration under one management of all elements of production and distribution has lately gained tremendous headway and its propriety is scarcely debatable. In adjusting their operations to this cost-controlling trend, the farmers have shown a business acumen and an awareness of what is going on not commonly accorded to them. A large portion of cooperative manufacturing operations, it should also be noted, is merely an extension and disposed of by evidence to the contrary, placed in the record by numerous farm organizations. however, there is no news in the fact that a man does pay taxes, this expose of the erroneous accusations has not gained recognition.

Incorporated cooperatives are classed as "corporations not for profit." Their purpose is to perform a service without realizing a profit from the patrons they were organized to serve. All consumer cooperatives serving urban dwellers and a large share of all farmer cooperatives not only pay all taxes to which any business may be subject.



An innovation of the Fairbanks-Morse general-purpose motor is the recessed conduit box for neat installations where space is at a premium.



The leads can be brought in between the feet of the motor through a tapped hole in the motor frame, and the conduit box cover mounted flush with the frame. Neat installations are simple because of this feature. A conventional conduit box is provided, and may be used if desired.

The recessed conduit box is another of many features which make this the motor best suited to your use. To appreciate it fully, see a demonstration. Write Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Ill.

## Every Good Feature You Could Ask!

Copperspun Rotor—The only rotor centrifugally cast in one piece—and of copper.

Protected Frame—Excludes dripping liquids and falling particles.

Cross-flow Ventilation — Another exclusive feature. Air moves in both directions, providing uniform cooling—no hot spots.

Ball Bearings - Sealed in and protected.

Adaptability—Frame gives protection in any mounting position because the vented bearing brackets can be turned to four positions 90° apart. Reversible frame permits locating conduit box on either side.

Balanced Characteristics—A 40° C. motor with high efficiency and power factor, and excellent starting and accelerating torques.

BUY WAR BONDS TO BACK THE FRONT

## Fairbanks-Morse

A name worth remembering



Diesel\_Locomotives · Diesel Engines · Generators · Motors · Pumps · Scales Magnetos · Stokers · Railroad Motor Cars and Standpipes · Farm Equipment

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# Purchasing Agents and their Assistants are invited to Check the Coupons on the "Know-How" Pages, Nos. 10, 12, 14 and 16, for late catalogs and bulletins on New Products, Materials, Finishes, Equipment, etc.

### POWER MEASUREMENT LAMPS

SIMPLE, direct measurement of the power output of electronic and radio communication equipments at frequencies up to 900 mc, are provided by six types of Power Measurement Lamps de-



veloped by Sylvania Electric Products, Inc., Emporium, Pa. Built with two identical small filaments and mounted in lock-in type bases these lamps measure outputs ranging between 0.05 and 25 watts with accuracies with 5% or less, depending on the type of reading taken. Increased accuracy may be obtained by reversing the filament circuits and averaging results.

IMPROVED ALUMINUM WELDING FLUX FREE-flowing flux for the gas welding of aluminum and aluminum alloys known as "Flo-Well" No. 1, is be-

ing marketed by A. K. Mauk, 7537 Hamilton Ave., Pittsburgh, Pa. Manufacturer says it will not solidify or deteriorate, and is easily applied by inexperienced welders. Free sample and instructions for use will be sent upon request.

## DIE SEPARATOR

LYON - Raymond Corp., 2319 Madison St., Green, N. Y., announce another optional feature for their portable hydraulic elevating table. This die separator consists of a tubular superstructure



which fastens to the base of the table by four bolts with wing nuts. Dies are separated by elevating the table top, fastening the top section of the die to the superstructure by means of the chains, then lowering the table top with the bottom section of the die. Separator is readily demountable.

PENNSALT CORROSION-PROOF CEMENT NEW resin-type cement, known as Pennsalt PRF Cement, is announced by Pennsylvania Salt Mfg. Co.,

Philadelphia 7, Pa. It is a quick-setting, cold-hardening acid, alkali and solvent proof product composed of a liquid and a powder which, when mixed, reacts chemically to form a cement. It has been designed specifically for bonding corrosion-proof brick and tile in uses where both acids and alkalis are encountered.

### HYSTER KARRY KRANE



BECAUSE it can work both inside warehouses and factories and on outside storage lots with rough and uneven surfaces the Hyster Karry Krane, a 10,000 pound capacity crane built by the Hyster Company, Portland, Oregon, and Peoria, Illinois, is termed an all-purpose unit by its manufacturers. It is said to fit into most high speed materials handling programs.

LIGHT-WEIGHT FACTORY APRON NEW lightweight, acid, alkali and oil resistant apron made from fabric coated on one side with a black vinyl

resin, for use in the canning and other industries, is announced by the B. F. Goodrich Co., Akron, Ohio. All edges are hemmed. The neck and waist tape is in one piece, sewed into the hem of the arm cut-out, giving the apron strength and rigidity as well as a good drape. They are in two sizes—29 x\*35 in. and 35 by 45 in.

## PLASTIC BERGER LOUPE

PLASTIC Berger loupe with light-weight plastic frame which is held securely and comfortably before the eyes by an adjustable elastic headband, is announced by the American Optical



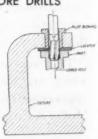
Co., Southbridge, Conn. It is adjustable for different facial contours and widths between the eyes, well ventilated and will fit any type of face. Precision-ground glass lenses give a magnification of 2.5X. It can be worn over prescription glasses.

ANNOUNCE PRECISION MAGNIFYING SCALE THE Micro Scale, a precision magnifying scale, is announced by the Leonard Engineering Co., Silver

Spring, Md. This is 6" standard rule with magnifying unit and height-depth gage graded up to 100th divisions. It is said to make for elimination of measuring mistakes and costly "work over", and to prevent eye strain.

## CARBIDE CORE DRILLS

SPECIALLY designed carbidetipped core drills, specifically intended for use in drilling hard scaly cast irons such as rough cast exhaust manifolds, have been introduced by Tungsten Carbide



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Tool Co., Detroit 6, Mich. The core drills are not carried as stock items since dimensional requirements of different applications limit standardization of general design. It is reported that the drills are giving in one application a life of some 10,000 holes 15%" diameter, 5%" deep, between grinds—equivalent to continuous production for 7 days with two 9-hour shifts per day.

(Continued on page 136)

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## If it's welding fittings or flanges,

It's in the complete Tube Turns line!



MORE than 4,000 different items make up the complete Tube Turns line. Whatever you need, in whatever quantity, can be supplied by your nearest Tube Turns distributor. There are Tube Turns distributors in all principal cities, and all of them carry comprehensive stocks to help you avoid delays when speed counts.

Tube Turns introduced the first seamless welding fittings. The complete Tube Turns line is today the product of years of successful experience—of meeting the demands of industry as they arose. Familiarity with every phase of modern piping practice, gained in the creation of the complete Tube Turns line, is an

"extra" you get when you do business with us. Back of every distributor stands the nearest Tube Turns branch office, backed up by the home office engineering staff.

Your Tube Turns distributor can be of real help to you. Get acquainted with him now. And write today for your free copy of Tube Turns Catalog No. 111, a 240-page handbook of welding fittings information.

Selected Tube Turns distributors in every principal city

TUBE TURNS (Inc.), Louisville 1, Kentucky. Branch Offices: New York, Chicago, Philadelphia, Pittsburgh, Cleveland, Dayton, Washington, D. C., Houston, San Francisco, Seattle, Los Angeles.





THE COMPLETE LINE OF WELDING FITTINGS AND FLANGES

## "MADE TO ORDER" WATER

RAW WATER is claimed to be quickly converted into chemically pure water, meeting predetermined specifications, through the use of compact De-Ionization System introduced by The Dorr Co., 572



Lexington Ave., New York, N. Y. Output can be regulated as to the exact degree of softness, purity, or mineral content required for wide variety of specific water uses. Operation under commercial conditions, the system is reported to have yielded specification water at from 2¢ to 20¢ per 1000 gallons, costs varying with the mineral concentration of the raw water.

## PREVENTS FOGGING OF SHIELDS & GOGGLES

N E W anti-fog preparation for keeping goggle lenses, face shields, and welding plates clear is announced

by the American Optical Co., Southbridge, Mass. Penetrating the ultramicroscopic pores of glass it deposits a thin film which helps prevent fogging, steaming, and frosting of all types of glass surfaces. In addition it also removes grease and dirt and allows perfect visibility. It is spread on both surfaces of glass, surfaces then being rubbed thoroughly and polished with soft cloth or paper.

## BUTT-FLASH WELDING MACHINES



DEVELOPMENT of new line of buttflash welding machines in five standard sizes embodying new design and operation features to provide maximum flexibility, ease of maintenance and operation, safety and reliability, is announced by Progressive Welder Co., Detroit 12, Mich. Machines range in electrical capacities from 20 KVA to 250 KVA. Design of machines permits them to be furnished for hand, air, hydraulic or motor operation. According to nature of work to be done, a machine may be manually controlled, semi-automatic or fully automatic. Design and construction enables the ready mounting of all manner of special horizontal and vertical acting clamping fixtures and tooling to allow for wide variations in sizes and shapes of work.

## ANNOUNCE 3-PURPOSE WELDING ELECTRODE

NEW combination type welding electrode, Airco No. 315, designed to produce horizontal fillet welds with

flat or slightly concave profiles and concave fillets in the flat position, as well as satisfactory deep fillet and deep groove, is announced by Air Reduction, 60 E. 42nd St., New York, N. Y. Electrode may be used with conventional technique, employing currents, under which normal penetration is obtained. Deeper penetration is secured when the deep fillet technique is used with the currents recommended for this procedure. Electrode can be used for any job that calls for a 6020 or 6030 electrode and may be applied with either the alternating or direct current, straight or reverse polarity.

## IMPROVED DIACRO BENDERS



THREE entirely new DiAcro bender models, thoroughly redesigned and reengineered to incorporate major changes and improvements over original models, are announced by the O'Neill-Irwin Mfg. Co., Minneapolis 15, Minn. Operation friction has been greatly reduced by installation of Torrington roller bearings, increasing ease of operation about 35 percent and adding considerable forming capacity. Important feature of No. 2 and No. 3 size benders is instantly reversible level control cam which allows operator choice of either right or left hand forming direction. The benders are highly versatile machines that can be arranged right on the job for all types of forming in all ductile materials including round, half round, square and hexagon rod, tubing, angle, channel, moulding strip stock and bus bar. 40-Page catalog sent on request.

## INSTANT 40-WATT FLUORESCENT LAMP

NEW 40 - watt fluorescent lamp, tailored especially for more dependable operation of instant-start lamps,

is announced by Westinghouse Lamp Divn., Bloomfield, N. J. Freed from former requirement that instant-start lamps be used with special lampholders, the lamp contains a new feature, a special metal tab within a medium bipin base. The tab is riveted to the two base pins connecting them within the lamp itself and preventing possible damage to the lamp cathode in the event improper or defective lampholders are used. The lamps will not operate on regular starter type equipment and can be used only with instant-start ballasts.

## TAP RECONDITIONER

INCREASED flexibility and an expanded range of capacities enabling the reconditioning of taps from the small machine screw sizes up to 1½" diameter feature improved Tap reconditioner mar-



keted by Detroit Tap and Tool Co., Detroit 11, Mich. All operations for keeping taps in "top" condition can be performed on the reconditioner as it is a 4-in-1 machine having facilities for full range chamfering, spiral pointing, point polishing, and grinding the full length of tap flute. Taps of 2 to 7 flutes can be chamfered, and flutes and spiral points can be ground on taps having from 2 to 6 flutes. All sizes and types of taps can be point polished.

## CHRISTMAS KIT HOLE CUTTING TOOLS

NEW kit for cutting holes of various diameters in wood, metal or plastics is announced by Bruno

Tools, Beverly Hills, Calif. Innovation is the special Christmas wrap in which kit is being packaged. Kit 790 is available with straight shanks for use in drill presses, pneumatic and portable electric drills. It contains adjustable hole cutter with ¼" shank for cutting holes 5%" to 1¼", and cutter with 3%" shank that cuts holes 1" to 2½". Tools are equipped with high-speed steel blades having an all-purpose grind. Printed matter available.

## TAPERLOCK V-BELT SHEAVE



ILLUSTRATION shows Taperlock V-Belt Sheave just announced by the Dodge Mfg. Co., Mishawaka, Ind., which is said to be a new and effective means quickly mounting and demounting V-Belt sheaves. Installation is a matter of slipping the sheave and bushing assembly onto the shaft and tightening two or three locking screws depending upon the size of the sheave. As screws are tightened bushing is wedged between hub and shaft. To remove, the locking screws are removed and one or two of them are inserted in jack screw holes which are partially in the bushing and partially in the hub. As the screws are tightened the bushing is dewedged and the sheave is free for removal.

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## Framed in Yolay, the Steel of Jamarraw

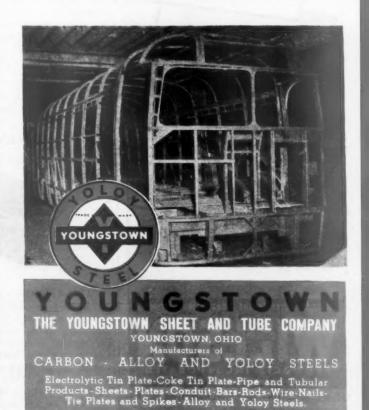
A new era in fast, safe, efficient coach transportation begins with a Yoloy-frame, as illustrated in this 33-passenger MAINLINER, now being built by C. D. Beck & Company, Sidney, Ohio for fast inter-city service in the postwar.

This entirely new design permits faster acceleration and braking with no sacrifice in safety, because the Yoloy frame reduces weight and increases strength at the same time.

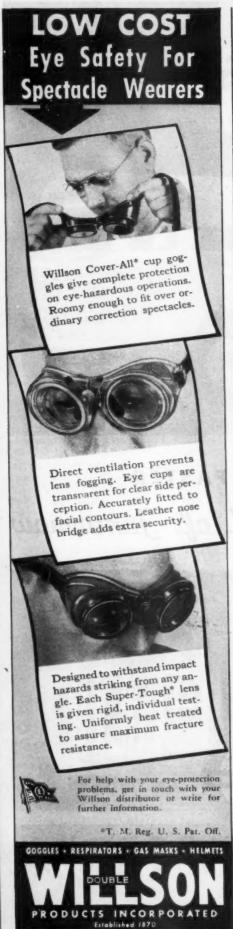
In trucks, trailers, coaches, railroad cars... wherever light weight must be coupled with strength, Yoloy is being picked for special new jobs in transportation.

Yoloy is a low-carbon, nickel-copper alloy steel. It is easily welded, drawn or machined, has exceptional corrosion resistance, high tensile strength and great impact strength. It increases payloads, steps up performance, cuts dead weight.

You too, can go places with Yoloy. Write for turther informatiom.



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221 WASHINGTON STREET - READING, PA., U.S.A

## RINSER & STERILIZER FOR FOOD CANS

PEDAL operated food can rinser and sterilizer is announced by the Vacuum Can Co., 25 So. Hoyne Ave.,

Chicago, Ill. It is known as the Bestov can rinser, and cleans by three operations—deluge of cold water, blast of hot water, and finally with steam. It can be used for cleansing and sterilizing other kitchen utensils as well as food cans, "in less time than it takes to tell about it."

### CHATTERPROOF LIVE CUTTER



EXTREME accuracy and positive elimination of chatter are claimed for the Roto Center, new product of Falls Products Co., Milwaukee 13, Wis. The Roto Center is said to retain dead center accuracy. It is intended primarily for use in grinder and lathe tail stocks for replacement of dead centers that fail to stand up. Removal of all internal play and preloading the bearings through a threaded retaining ring prevent chattering. Morse tapered shanks are standard, but other sizes and specials are available.

## CL. 1 GR. C EXPLOSION-PROOF MOTOR

A NEW Class 1. Group C, explosion-proof motor, for atmospheres containing ethylether and similar

vapors, is announced by the Motor Division of the General Electric Company. Recommended for use in chemical plants, hospitals and research laboratories, the new motor was tested and listed by the Underwriters' Laboratories in July 1944. Available in frame sizes 204-326, and in Types K (normal torque) and KG (high-starting torque), motor is rated at ½ hp tt 600 rpm to 20 hp at 3600 rpm, 110, 208, 220/440, 550 volts, 60, 50, 25 cycles.

### NON-METAL TOTER



ILLUSTRATION shows all-purpose non-metal toter offered by Andrew Technical Service, 3553 N. Halsted St., Chicago, Ill. It is rigidly constructed of impregnated, compressed fiber-board. Possess enough "give" to make them suitable for handling glassware and other fragile articles. They are water and oil resistant; quiet, wood cleats on underside serve as skid bars.

## NEW BOX STRAPPING



TOUGH, pliable, next box strapping named Fiber-Steel has been introduced by A. J. Gerrard Co., 221 No. LaSalle St., Chicago. It consists of a highly flexible steel band core sheathed in a tough kraft paper which has been waterproofed. The smooth, wax-finished, waterpellent cover is scuff-resistant and provides proper tension without excessive biting into a corrugated box. The strap can be applied directly to enameled or painted surfaces without danger of marring, according to the maker. Trade-marks and company names can be printed on the paper covering.

## INTRODUCE "GROUNDED" WORKLITES

IMPROVED type of Work-Lite for attachment to machine tools, assembly benches, desks, etc., is announced

by the Swivelier Co., 13 Irving Place. New York, N. Y. In place of usual cord and cap this unit comes with Greenfield cable and leads, for direct attachment to outlet box or transformer, thus "grounding" the entire unit. Unit is available in a choice of arms from 12" to 30" long; four types of shades—cone, bell, parabola or acorn; and with or without removable glass lens (frosted, clear or daylight). Entire arm is adjustable in

## HOLDS WORK AT ANY ANGLE



PURPOSE of new model S Metro Positioner developed by Metro-Vise Co., Detroit 2, Mich., is to simplify the tilting of work during various assembly operations by permitting the angle of tilt to be adjusted almost immediately and without the necessity of stopping work to manipulate work. Place Plate is integral with a ball turning in the socket formed by two clamping jaws so shaped and pivoted as to maintain a firm grip of the ball, yet so tensioned as to let the ball "roll" in the socket when a change in the socket when a change in the angle of the tilt is desired. When the vise or fixture required to be given a different angle, the ball is instantly responsive to simple hand pressure. There are no fixed graduations, therefore there is unlimited freedom of movement-any angle, any direction. Positioner is supplied in two sizes.

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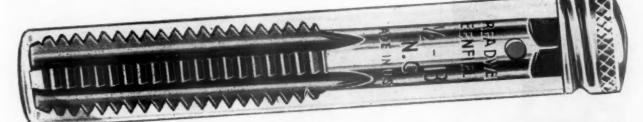
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## THESE Threadwell TAPS and TOOLS FIT ry Them Your NEEDS TO A



Threadwell COLD-TEMPER TAPS, treated at 120° below zero, will quickly demonstrate their ability to turn out more and cleaner threads per tap, whether you're threading steels, cast iron, alloys or plastics.

Every ground thread tap comes in its neat, protective "Tap-Capsule", a transparent plastic tube which with Threadwell's exclusive color "i-dotification" (red dot on the shank for cut thread, white dot for commercial ground, blue dot for precision ground) makes correct selection sure and rapid. Threadwell Taps are greaseless rust-proofed, always clean, dry and shining.

Get in touch with your local Threadwell distributor. He is equipped to give intelligent personal attention to your needs; or write for descriptive folders containing complete information.

Threadwell KeywayCutter Sets give you the fastest, simplest method of cutting keyways to standard width and any desired depth in gears, cutters, couplings, pulley hubs, etc. May be used with any press. (Threadwell offers an ideal Arbor Press for the

purpose - light, inexpen-

sive, but sturdy and speedy.)

Threadwell High Speed Counterbores assure fast production and long life. Designed with two cutting lips with spiral flutes for ample clearance and strength, they are easily sharpened, nonchattering. Available with straight or taper shanks for fillister head screws or for spot facing.



DISTRIBUTORS IN LEADING INDUSTRIAL CENTERS THROUGHOUT AMERICA



THREADWELL TAP AND DIE COMPANY . GREENFIELD, MASSACHUSETTS, U. S. A.

CALIFORNIA OFFICE, THREADWELL TAP & DIE CO. OF CALIF., 1322 SANTA FE AVE., LOS ANGELES 21

## Economize POWERS

## TEMPERATURE REGULATORS



OVER 50 YEARS

OF AUTOMATIC TEMPERATURE AND HUMIDITY CONTROL

## MICRO-KING MILL-DRILL



ILLUSTRATION shows Micro-King Mill-Drill, product of Steel Tools. Inc., 2307 Prospect Ave., Cleveland, Ohio., which is especially designed to mill and drill any sheet metal products or any

form of plastic material. Manufacturer states that sheet metals that twist out of shape and plastics that shatter under ordinary drilling can be drilled smoothly and perfectly with this tool. Lead holes are unnecessary. Perfect holes are drilled in one operation. High speed, chrome plated mill-drill sets are available in sizes from ½" to 2". Same drills can be used on plastics and sheet metals. Printed matter available.

### IMPROVED SHOP BOXES



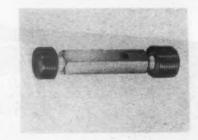
SMOOTH, unobstructed interior surfaces and smooth rounded edges feature improve line of stacking boxes, skid boxes, shipping boxes and box trucks made by G. B. Lewis Co., Watertown, Wis. Top cleats are shaped so that ends are covered to prevent snagging, splitting or slivering of edges and other framework cleats are formed to provide a rounded edge.

### TWIN FLUTED COUNTERSINKS



TWIN-FLUTED countersinks for cutting aluminum, magnesium, steel, plastics, plywood, etc., are announced by the Grobet File Co., 421 Canal St., New York 13, N. Y. They are said to give a very smooth micro-inch finish, and to be adaptable for coarser work such as brake linings. There are eight units to the set, giving a full range of six sizes with duplicates in two sizes. Each Grobet sink is guaranteed against chattermarks. Bul'etin describes new tools in detail.

## HARD ALLOY THREAD PLUG GAGE



LINE of thread plug gauges of Tantung, non-ferrous hard alloy, is being made by Master Gauge Co., 2222 Fenkell, Detroit 22, Mich. Tantung is hard, strong, tough alloy containing cobalt, tungsten, chromium and tantalus-columbium carbide. Latter imparts a peculiar self-lubricating action which increases resistance to wear. Tantung is dense and fine grained, takes a high finish, is non-resisting, non-magnetic and is not corroded by moisture or any of the common acids or fumes. Printed matter available.

## PLATE DUPLICATOR SAVES TIME

MACHINE designed to punch short runs and irregular shapes with mass production efficiency, known as

a plate duplicator, is announced by Thomas Machine Mfg. Co., Pittsburgh 23, Pa. It was developed to overcome hand marking, hand positioning, and use of two or three machines where coping, notching or different size holes are required. It is said to meet shop need for rapid, accurate duplication of holes, notches, coping and other operations in plates and panels in runs of two to several thousand. It requires no setting up.

## SHOCK ABSORBING LAMP

HIGH-impact filamp, equipped with a rubber cushion base, designed to withstand violent physical shocks of modern naval warfare, is announced by General Electric's lamp Department at Nela Park



ment at Nela Park headquarters, Cleveland. The lamp has actually been in 'naval service" since early in the recent war. Except for a thick band of rubber surrounding the neck of the bulb, it closely resembles the ordinary household lamp. Remainder of the heat and shock resisting rubber skirted insert is firmly located between the lamp's medium-screw brass base and the bulb's glass neck. Lamp has extra sturdy internal construction. It is rated at 50 watts. Skirt is sufficiently elastic to absorb violent shock yet is sufficiently rigid to prevent whipping to and fro, Laboratory tests show that the lamp can withstand shocks of 2000 footpounds and more.

(Continued on page 144)

## First you've gotta know what a chuck is



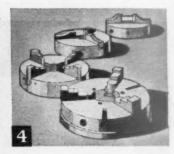
Chucks hold tools or work that Chucks owe their origin to the are in motion.



ancient potter's wheel.



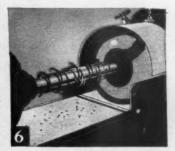
First chucks were used for making cannon in War of 1812.



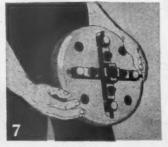
There are many kinds of chucks. Here are some in common use.



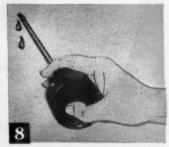
Many chucks are too "slow" for modern high-speed production.



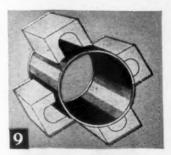
Other chucks aren't positively true -lack hair-splitting accuracy.



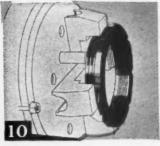
New and better is the amazing Woodworth Diaphragm Chuck. flexes like bottom of oil can.



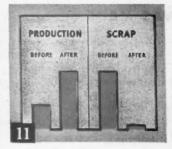
Jaws fasten to diaphragm which



in machining to close accuracy. essed with fine precision.



Thin-walled parts won't distort large, heavy parts can be proc-



Steps up production 21/4 times scrap practically eliminated!



winner! Industry acclaims Woodworth Diaphragm Chuck!

## What Woodworth Products Mean to Industry

THE DIAPHRAGM chuck is a typical Woodworth contribution to mass production efficiency. Here's why.

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Every Woodworth product must conform to the basic policy of this company - TO MAKE ONLY PRODUCTS WHICH WILL BENEFIT IN-DUSTRY THROUGH IN-CREASED PRODUCTION AND REDUCED COSTS.

This means that the great demand for Woodworth Tools and Gages will be continuing, especially in view of the coming battle for postwar markets.

And it means that Woodworth engineers have been charged with the responsibility of searching constantly for new ways to speed up and lower the cost of production, in connection with Woodworth Products of the future.

The constant growth and expansion of the N. A. Woodworth Company is due to strict adherence to these objectives.

ACCURACY YOU WE CAN TRUST

N. A. WOODWORTH CO., SALES DIVISION, 1300 E. HINE MILE ROAD, DETROIT 20, MICHIGAN

PRECISION GAGES PRECISION MACHINED PARTS PRECISION TOOLS

## OF ROBERTSON Cool-Cut WHEELS



## HOW THE TEST WAS MADE

Five leading manufacturers of abrasive wheels were requested by the United States Testing Company, Inc., to furnish grain and grade of wheel which they would recommend for doing the most efficient job of grinding hardened steel under the following specifications:

Steel—Ludlum Oil Hardening Steel, Rockwell Hardness 58 to 60 Grinder—No. 2 Brown & Sharpe Surface Grinder Table Speed of Grinder—33 feet per minute Depth of Cut—.015 inches Cross Feed of Cut—.020 inches Size of Wheel—7" x ½" x 1½"

Each wheel was dressed on the Grinder and then passed over the work four times without any further dressing.

In its report of this test, the United States Testing Company, Inc., makes the following conclusion: "The result of our tests on the five abrasive wheels has shown conclusively that wheel "E," manufactured by the Robertson Manufacturing Company, and marked W 54 I 2, produced a ground piece of hardened steel of smoother finish, more accurately held to size, and with less effort."

In view of the conclusions of this impartial test, made by a nationally-known testing laboratory, you will want to know more about Robertson Cool-Cut wheels. Write for the free booklet, "How to Buy Production-Time," which tells all about Robertson Cool-Cut wheels.



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ROBERTSON

MANUFACTURING COMPANY

Manufacturers of Vitrified Bonded Grinding Wheels, Mounted Wheels, Segments

\* Test No. 57347, August 3, 1945



CLEAN. CONTROLLABLE HOT WATTS" TO BRING YOUR HEATING PROCESSES Uptopar...

ANOTHER ONE OF 22 WAYS YOUR

## WESTINGHOUSE DISTRIBUTOR

CAN HELP YOU MODERNIZE Electrically





TWENTY-ONE OTHER WAYS your Westinghouse Distributor can help you in planning electrical modernization, whether for a single department or for your entire plant, are suggested in this new book. It provides a valuable check list on modern electrical practices...from incoming electrical power to methods of utilization and control. Ask your Westinghouse Distributor today for a copy of B-3476. Or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.

Electric heat is a quick and easy way to bring the efficiency of many processes up to par . . . to modernize the heating arrangements for isolated working areas . . . to help your plant meet and compete with the new standards of efficiency established by modern newly-built war plants.

Unit heaters-wall type and fan type-and heating units for any industrial heating problems, are just a few of the wide range of electrical aids to plant modernization on which your Westinghouse Distributor is equipped to help and advise you.

Whether you have solids, liquids or air to heat, he can recommend correct types and ratings of industrial heating units to deliver clean, controllable heat . . . quickly, efficiently and economically . . . where it's needed.

Check your Westinghouse Distributor today . . . let him help you make an electrical checkup of your plant for practical places and ways that modern electrical equipment can replace or revitalize your old equipment to advantage.



## LUBRIPLATE No. 130-A



## LUBRICATION PLUS!

A SUPER LUBRICANT-A MARVELOUS ANTI-SEIZE COMPOUND-A REAL PROTECTION AGAINST RUST AND CORROSION, From the standpoints of general utility and wide diversity of important uses, we do not believe there has ever been a lubricant that compares with LUBRIPLATE No. 130-A. II has everything. The outstanding performance of this super-lubricant and its adoption by industry in general, and the Army and Navy are certainly adequate proof of its superiority. Write for copy of bulletin No. 6-41.

## LUBRIPLATE

Lubricants definitely reduce friction and wear to a minimum. They lower power costs and prolong the life of equipment to an infinitely greater degree. LUBRI-PLATE arrests progressive wear.

## LUBRIPLATE

Lubricants protect machine parts against the destructive action of rust and corrosion. This feature alone puts LUBRIPLATE for out in front of conventional lubricants.

## LUBRIPLATE

Lubricants are extremely economical for reason that they possess very long life and "stayput" properties. A little LUBRI-PLATE goes a long way.

Write for a booklet. "The LUBRIPLATE Film written especially for your industry.



## ANNULAR MARKING DEVICE



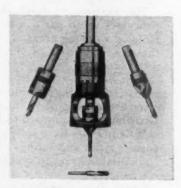
HAND stamping device for annular marking which is said to speed up marking in production is announced by New Method Steel Stamps, Inc., 147 Jos. Campau, Detroit, Mich. Marker uses the same size of type blanks and characters for all small or large flat surface radii being marked. Need for spacers between individual type characters is eliminated. Single character can be removed without disturbing rest of type. Design is such that variations to suit individual requirements are readily made.

## FOUR NEW MARINE RADIO TELEPHONES

FOUR new models of marine radio telephones designed to meet communications requirements in the yacht-

ing and coastal harbor service, are announced by Hudson-American Corp., subsidiary of Reeves-Ely Laboratories Co., New York, N. Y. The complete line covers ship-to-ship, ship-to-shore, and ship-to-Coast Guard (emergency) marine radio telephones ranging from 5 watts to 75 watts and operating on frequencies between 2100 kc and 2800 kc. No variable condensers are used in the sets, precluding danger of inefficient operation. Outstanding feature is the development of a new transmitter-output coupling system designed to give greater efficiency of operation and to minimize both interference and harmonic radiation.

### VERSATILE DRILLING TOOL



NEW tool known as Drilpilot which permits drilling and countersinking, drilling and spotfacing, or drilling and counterboring in one operation, has been developed by Air-Craft, Inc., 750 E. Gage Ave.. Los Angeles, Calif. Drilpilot can be used in place of any standard pilot. Comes only in standard rivet sizes No. 40, No. 30, No. 21 and No. 10

(Continued on page 146)

## LUBRIPLATE No. 70



## LUBRICATION FOR WHERE IT'S HOT AND WET!

LUBRIPLATE No. 70 is a medium density, grease type lubricant ideal for applications exposed to heat, steam and moisture. It does a wonderful lubrication job under all conditions. In processing and food plants where moisture, steam, heat and fumes are prevalent, it has no substitute. Machines lubricated with LUBRIPLATE No. 70 can be washed down with hot water without harming the lubricant in the bearings. LUBRIPLATE No. 70 prevents rust and corrosion

FOR YOUR MACHINERY al for general eil type lubrice. elled bearings, wick feeds, and bettle ellers.

No. 107—One of the me

No. 130-AA—Known nations superior lubricant for open ge duty bearings, wire rope, etc.

BALL BEARING—This is the PLATE lubricant that has achiev acclaim for use in the general ru and roller bearings operating of 10 5000 RPM and temperature 300 degrees F.

Write for a booklet, "The LUBRIPLATE Film"



### **4-TON NUTCRACKER!**

About the size of a baseball, the Brazilian Babassu nut is armored with a  $\frac{3}{4}$ " shell to protect its valuable oil-rich kernels. Time-honored method of whacking open the shells with machete was tedious, slow, and dangerous. Now production will be doubled, thanks to a "king size" portable nutcracker.

Applying a 4-ton pressure necessary to crack the nuts open, the machine was designed by the A. P. Bamford Co., with the assistance of Frasse engineers — who recommended heat treated stainless steel working parts to provide necessary toughness, withstand tropic atmospheric corrosion — and remain fool proof to jungle workers' neglect.

Similar engineering counsel on your stainless requirements is an integral part of Frasse stainless service. Frasse knows stainless — and stocks it in a wide range of sizes, shapes and types for immediate use. Call on us. Peter A. Frasse and Co., Inc., 17 Grand Street, New York 13, N. Y. (Walker 5-2200): 3911 Wissabickon Avenue, Philadelphia 29, Pa. (Radcliff 7100-Park 5541): 50 Exchange Street, Buffalo 3, N. Y. (Washington 2000): Jersey City, Hartford Rochester, Syracuse Baltimore.





Chicago Metal Hose Corporation's 43 years of experience went into manufacturing its part of *Jet Propulsion, Pressurized Cabins* and kindred marvels of a modern day.

For each of these scientific achievements began with research. A search by trained men months and years ago for better tools, better metals, better ways of doing things.

This pioneering has made for scientific advancement in the manufacture of flexible metal hose. Today, for example, Chicago Metal Hose Corporation can offer you outstanding advantages. Our engineers are specialists in the science of fabricating and corrugating Stainless Steel and other metals. Out of our long experience have come new techniques in metal strip forming and welding that are increasing efficiency on hundreds of industrial applications. If your problem involves flexible metal tubing, bellows or allied products. . . find out now how we can help you! Write today.

Flexible Metal Hose for Every Industrial Use



Plants: Maywood and Elgin, Ill.

#### ONE-HAND TRUCK

ILLUSTRATION shows new light weight hand truck built for one-hand operation, available from Yarco Distributors, 215 W. 7th St., Los Angeles, and 120 St., Wall New Truck has York.



double tubular frame providing maximum strength and minimum weight. It carries loads up to 500 lbs with ease. Wheels are copper-brazed, double-disc, pressed steel type with "floating steel ball" lubrication, hard rubber treads are vulcanized to the rim. Truck stands straight when not in use.

### SMALL CARBIDE REAMERS



SOLID tungesten carbide reamers in sizes as small as .125" are announced by Super Tool Co., Detroit, Mich. Reamers can be produced in sizes as small as .09375". These are made only on special

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order.

### HIGH SPEED CHAIN CONVEYOR LUBRICANT

NEW lubricant for high-speed chain conveyors has been developed by Turco Products, Inc., 6135 So. Central Ave.,

Los Angeles, Calif. It is marketed under the name of Botlume. It is non-staining, soapless, non-corrosive and contains no oil. It has tremendous wetting action; one drop will quickly cover large area with a thin but exceptionally durable film. It is automatically dispensed through any simple container with a petcock and needle valve.

### BANK-TYPE RESISTOR

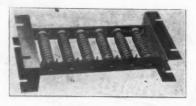


ILLUSTRATION shows Regan Bank-Type Resistor developed by Techtmann Industries, Inc., 828 No. Broadway, Milwaukee, Wis. While 6 resistors in a bank is considered standard, they can be built from 2 to 24 in a bank. Cores, elements, straps and binding posts can be purchased separately. Replacement of burned out element is a matter of minutes. Glazed steatite cores are used. Printed matter ava'lable.

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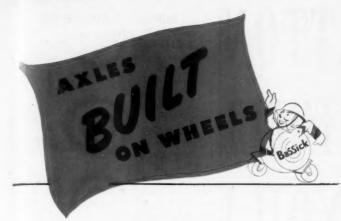
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# BASSICK GROOVED-WHEEL CASTERS SPEED PRODUCTION OF HEAVY-DUTY AXLES

At Standard Steel Spring Company, Madison, Illinois, the axle assembly line rolls along angle iron floor track. Trucks mounted on Bassick Grooved-Wheel Casters progress along the line, moving or halting to accommodate assembly requirements.

Such "caster-eased" production lines give materials handling the greatest degree of flexibility — in several respects. The track can be laid wherever desired . . . and is inexpensive to install. The trucks, cradles, fixtures or dollies can be rolled off the track, if desired. Work can be moved along, easily, as needed . . . and held securely in position by the Bassick Positive Position Lock.

This is another illustration of new things you can do with casters. Stay in touch with Bassick for the latest developments in the use of casters to speed production, simplify work, protect floors. Bassick's is the world's most complete line; Bassick engineers are responsible for the chief advancements in the design and application of casters. THE BASSICK COMPANY, Bridgeport 2, Conn. Division of Stewart-Warner Corporation. Canadian Division: Stewart-Warner-Alemite Corp., Ltd., Belleville, Ont.



Bassick Grooved-Wheel Casters on Track Assembly Line for Heavy-Duty Axles at Standard Steel Spring Company.



Bassick Grooved-Wheel Caster and Truck Lock. Latter holds portable equipment securely in place on tracks or floors.

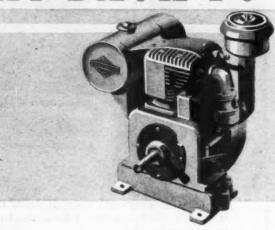
Making more kinds of Casters... Making Casters do more

Bassick

# BRIGGS & STRATTON

# ENGINES NOW ON THEIR

# WAY BACK TO YOU



BACKED by an outstanding record of valiant service in scores of standard and special wartime applications, Briggs & Stratton 4-cycle gasoline engines have returned to peacetime activities. With greatly expanded facilities for precision manufacture, we are now producing more and more quick-starting, dependable, trouble-free, Briggs & Stratton gasoline engines in a full range of sizes and models — recognized the world over as the preferred "air-cooled power".

BRIGGS & STRATTON CORPORATION
Milwaukee 1, Wis., U. S. A.

Air-Cooled Power



### SURFACE PLATE GAUGE

PLA-CHEK, new gage for surface plate work is announced by Cadillac Gage Co., 20316 Hoover Road, Detroit, Mich. Gage is guaranteed accurate from .0005" for any size from .001" to 12" from



the surface of the plate. It is made from hardened steel bar with 12 steps spaced exactly 1" apart with a micrometer screw thread ground on the lower end; a large micrometer thimble graduate in .001" on the upper end of the bar, and a simple triangular-shaped support bracket.

### ELECTRONIC CONTROLS INCREASE OUTPUT

ELECTRONIC feeder control for hammer mills, attrition mills and cutters, announced by Mosher Elec-

by Mosher Electronic Controls, 130 W, 42nd St., New York, N. Y., is said to eliminate "guesswork" of human controls and make for full production. The regulator maintains the load on pulverizing equipment at the maximum rated capacity of the connected motor, it is said, making for production increases of 20 to 35% from each mill. Literature available.

### NEW CHEMICAL EXTINGUISHER



ILLUSTRATION shows new chemical engine known as Foamite Challenger 40 gal. engine, announced by American-LaFrance Foamite Corp., Elmira, N. Y., which is said to produce 50% more fire killing foam, and to deliver it fast — 450 gallons in less than three minutes. Extinguishing hot oil fires without danger of reflash is the principal function of the engine. Printed matter available.

(Continued on page 152)

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The right Tire for every job!



UNITED STATES RUBBER COMPANY

Serving Through Science

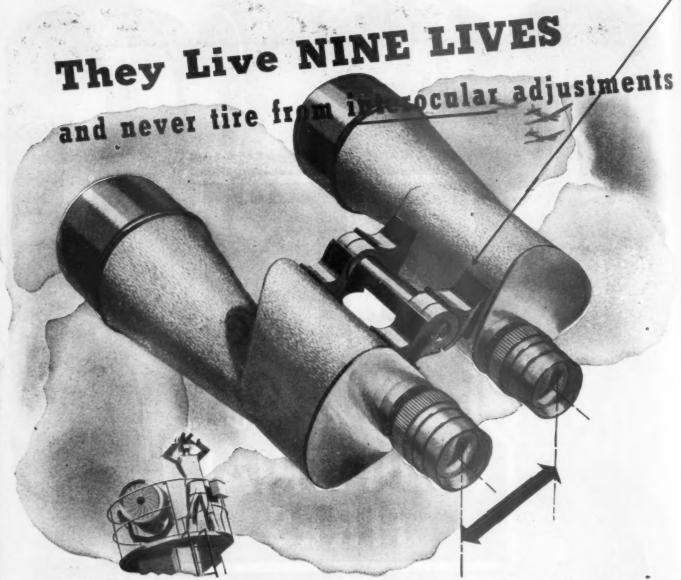
1230 Sixth Avenue . Rockefeller Center . New York 20, N. Y

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Navy binoculars must have at least nine lives ... and that goes double for the hinge. The hinge should be loose enough for fast battle adjustments and tight enough to stay put when adjusted, and take two-fisted abuse from all hands. The hinge can be, and often is, a trouble spot.

In the manufacture of Navy Binoculars, Kollsman Instrument Company developed a hinge which has earned a fine reputation. On test, this hinge has been opened and closed 125,000 times without causing any change in its smooth action, without requiring any adjustment.

For three of the four principal parts of the hinge, including the axle, the metal selected was corrosion-resistant, wear-resistant Riverside Nickel Silver. Phosphor Bronze, Nickel Silver and Beryllium Copper are the three alloys Riverside devotes all its energies to. Books on any or all are yours for the asking.

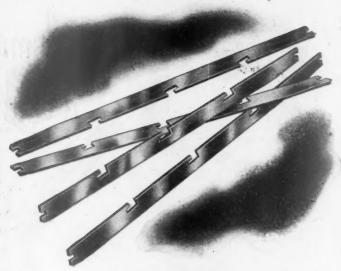
INSIDE RIVERSIDE—Some people look on customers' specifications as a no-good hampering nuisance. Not so at Riverside. Our men regard your specifications as a valuable guide. Furthermore, they say that a common understanding, instrumented by a specification, places responsibility for performance squarely where it belongs. Isn't clear-cut responsibility what you want?

RIVERSIDE

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RIVERSIDE PHOSPHOR BRONZE ALLOYS — Copper-tin alloys to which phosphorus is added. Made in variety of wrought and malleable alloys; special leaded mixtures; in non-malleable cast and turned rods for bearings and bushings. PROPERTIES—Wide range of tensile strengths and hardnesses. In general, phosphor bronze is a good electrical conductor, non-magnetic, and has a low coefficient of friction. It is easy to machine, can be welded by carbon or metal arc (there's a special alloy for flame welding), can be brazed or soldered. Easy to punch, draw, stamp, or spin. Phosphor bronze is rustless and resistant to corrosion, fatigue and wear. Supplied in sheets, strips, wire, rods, circles, bars, blanks or ingots.

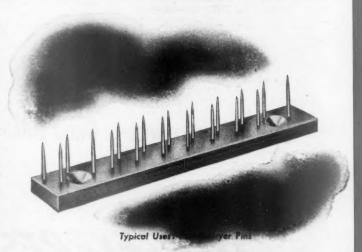


Typical Uses: Jordan Bars

RIVERSIDE NICKEL SILVER ALLOYS — A combination of copper, nickel and zinc in various proportions. Made in variety of alloys, tempers, anneals; and in free-cutting alloys. PROPERTIES—Vary according to alloys. Tensile strengths up to 160,000 p.s.i., elongations up to 50%. Nickel silver is valued electrically for its specific resistance, and physically because of its clear-through silvery white appearance. In general, it is tough, resistant to wear, fatigue, and corrosion. Easy to machine in any manner, weldable by all methods, can be brazed or soldered and is extremely workable. Readily formed, bent, drawn, stamped, punched, embossed or spun. Supplied in sheets, strips, wire, rods, circles, bars, blanks and ingots.



RIVERSIDE BERYLLIUM COPPER — an alloy with an unusual combination of properties — Unusually high strength. Excellent hardness, wear resistance and corrosion resistance. High thermal conductivity, good electrical conductivity. Easy to braze, solder, punch, draw or stamp. Can be cold worked. Outstanding for hot working qualities. Can be easily hot forged or hot pressed between 1050° and 1425°F., and heat hardened to achieve strengths rare to non-ferrous metals and alloys. Great resistance to fatigue under action, which is pronounced at high temperatures where other non-ferrous materials might fail. Negligible creep or hysterisis. Non-magnetic qualities. Supplied in sheets, strips, wire, rods, bars and blanks, usually, semi-hard, cold worked for fabrication and heat treatment.



PHOSPHOR BRONZE NICKEL SILVER BERYLLIUM COPPER



### No Idle Home Equipment **When Repair Parts** Come by AIR EXPRESS

Empty spaces on retailers' shelves or shortages of repair parts do not always mean that merchandise is not to be had. Often it's merely a matter of ordering a little at a time.

This is where Air Express steps-in. It speeds merchandise to those shelves-even if in small amounts - so that customers do

not have to be turned away or told that their household equipment cannot be re-paired for weeks. It brings the spare parts stocks of the nation within but a few hours of retail stores. Very often, Air Express means next day delivery.

And not only does the speed of Air Ex-press meet emergency needs in the retail trade, it puts suppliers' stocks so near at hand that it often means greatly reduced inventory and, therefore, faster rate of

Representing the AIRLINES of the United States

### Specify Air Express-a Good Business Buy

Shipments travel at a speed of three miles a minute between principal U. S. towns and cities, with cost including special pick-up and delivery. Same-day delivery between many airport towns and cities. Rapid air-rail service to 23,000 off-airline points in the U. S. Service direct by air to and from scores of foreign countries.



#### NEW CHILLING CABINET

NEW Vari-Temp Cold Cabinet is announced by the Precision Scientific Co., 1750 N. Springfield Ave., Chicago, Ill. Cabinet is available in two sizes, 1 cu. ft. capacity, and 8 cu.



ft. capacity. It operates with dry ice and was designed and developed to satisfy all the cold test conditions encountered and required by present day testing techniques, from -90° F to plus 220° F. Constant temperature in the specimen chamber is insured by an air stirrer which holds temperature constant to plus or minus 1 deg. F. All temperatures are controlled thermostatically,-one thermostat for low temperature and one for high temperature. Operates on 115 volts, 60 cycles ac.

BAND SAW **GUIDE &** SAFETY GUARD

BAND saw guide and metal safety guard especially adapted to metal and plastics as well as wood and ad-

justable to blades 1/4" to 1/2" wide, is announced by the Boyer-Campbell Co., 6540 St. Antoine St., Detroit, Mich. Guide wheels are mounted in staggered position to eliminate binding; grooved back wheel holds saw in position. These are equipped with double sealed, permanently lubricated ball bearings, making for smooth operation that produces clean, accurate cut.

### WORK POSITIONER



NEW balanced work positioner developed by Bentley Weldery, Inc., Box 1038, Syracuse, N. Y. is said to offer finger tip manipulation through 360 deg. of rotation and 138 deg. of tilt. Power equipment is unnecessary. New tool is said to reduce working time and production costs. The center of gravity, according to the maker, stays in one position through all operations. Illustration shows the tilt arm supported by a portable pedestal, having vertical adjustment, so that the height of the work can be best adjusted to suit clearance above the floor, or accessibility to operator. Capacity of model No. 5 illustrated is 500 lbs. Printed matter available.

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Visit this amazing department and you'll find a dozen different tests going on-some take half an hour, others weeks-to discover the kind of saw and proper speed that will do the best cutting job on anything you have to cut.

# DOALL'S MODER BORATO





### FREE TO YOU

Consider this as your own Test Laboratory. Take advantage of knowledge gained by saw testing thousands of jobs. Send us sample of your hard-to-cut material. We'll get busy and give you, without obligation, written report of our findings.

MAGNESIA & SUPEREX **BLOCKS** 

3024 sq. in. per min. 3-pitch DoALL Buttress

HOT ROLLED STEEL 1/4" thick 40 lin. ft. per min. 14-pitch DoALL Precision

BRASS TUBING 1/2" o.d. 600 cuts per min. 24-pitch DoALL Precision

MONEL METAL 3/16" thick 132 lin. in. per min. 10-pitch DoALL Precision

**BRONZE CASTINGS** 

18.3 sq. in. per min. 6-pitch DoALL Precision

ALUMINUM CASTINGS 120 sq. in. per min. 3-pitch DoALL Buttress

MELAMINE RESIN INSULATION 1" thick

26.4 lin. in. per min. 14-pitch DoALL Precision

WELDING RODS 3/32" diam. 900 rods per min. 10-pitch DoALL Precision

STAINLESS STEEL .031 thick 80 lin. ft. per min. 24-pitch DeALL Precision

BRASS ALLOY CASTINGS 22.6 sq. in. per min. 3-pitch DoALL Buttress

MALLEABLE CASTINGS 48 sq. in. per min. 10-pitch DeALL Precision

FINKL STEEL DIE BLOCK 15" thick 1.18 sq. in. per min. 3-pitch DoALL Buttress

DoALL Precision and DoALL Buttress Saw Bands come in 100-ft. coils or cut to length to fit any band saw. Write or phone for literature.

Contour Sawing

Band Filer

Houston



Magnetic Chucks Surface Grinders and Selectron



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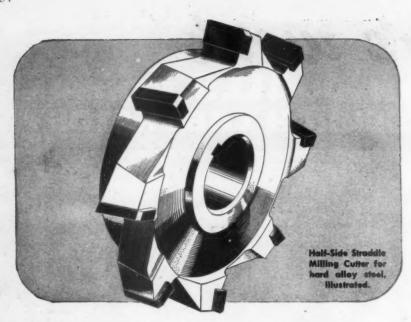
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### NCREASE PRODUCTION

as many as

### IO TIMES with these new standard carbide tipped MILLING CUTTERS

IT'S EASY to increase production as many as 10 times with Wendt-Sonis Standard Milling Cutters. These new milling cutters employ a negative radial and helix angle feature on the cutting edge for milling steel; positive angle for milling non-ferrous materials.

### Distinctive Advantages of W-S Milling Cutters

INCREASED SURFACE FEED-Machines hard alloy steel up to 750 surface feet per minute; non-ferrous materials up to 3400 surface feet per minute.

PREVENTS VIBRATION - The built-in heavy lug fly-wheel prevents vibration, adds strength to cutters; lengthens life of tool between sharpenings.

ESPECIALLY DESIGNED - for carbide cutting-not just a HSS design with carbide tips. Recommended for milling all types of material.

EASILY RESHARPENED - on any universal tool and cutter grinder.

Carbide Tipped Tools are a specialty with us. We make them exclusively. Our experience, research, development and improvements are your assurance of complete satisfaction when you use W-S Carbide Tipped Tools. Refer to "TOOLS" in your Classified Telephone Directory, for your local W-S Distributor, or write WENDT-SONIS COMPANY, HANNIBAL, MISSOURI. Branch Warehouse: LONG BEACH, CALIFORNIA.



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### WASH & RINSE UNIT

POPULAR size wash and rinse which perunit, rinsing mits and washing in one unit, is announced by Optimus Equipment Co., 217 Church St., Matawan, N. J. Unit is It portable.



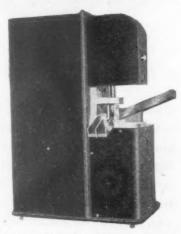
small, compact, and occupies floor area of only 12 sq. ft. It can be equipped with any type heating device and thermostatic control.

### **TRANSFORMS** SOLID CARBON DIOXIDE

DRY ice liquefier which transforms solid carbon dioxide into the liquid form has been de-The veloped by

Mathieson Alkali Works, 60 E. 42nd St., New York. It is known as the "Jumbo" and consists essentially of a tank 6'8" high and 34 in. diam., made of special steel and welded throughout. It has capacity for 20 full sized blocks, or 1000 pounds, of dry ice. Use of uncrushed blocks of dry ice saves labor and reduces evaporation loss, it is claimed. In addition to large capacity, features claimed are-absence of moving parts, long life of molded gasket, and operations without compressor and refrigeration unit, electric heating coils or sensitive control equipment.

### AUTOMATIC ELECTRONIC GAGE



AUTOMATIC electronic gaging instrument has been developed by Autotron Co., Danville, Ill. Entirely automatic the machine can gage the depth of holes, external lengths and outside diameters to very close tolerances with high precision, it is claimed. It operates at a speed upwards of 3300 pieces per hour, eliminating the human element. Where practical, the machine can be hopper fed into a loading chute from which point the machine automatically feed the pieces into inspection position. According to the makers it is possible to gage dimensions with tolerances as small as .0001" with accuracy. Machine can be used with metal, plastic, ceramic, glass or paper.

(Continued on page 158)

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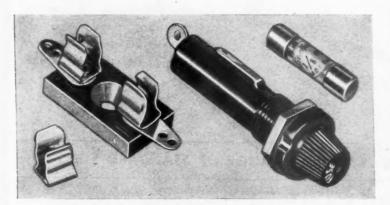
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### LITTELFUSE

FIRST in the development of instrument and aircraft and vacuum fuses under 1/4 amp. (3, 4, 5, and 8 AG; 3, 4, and 5 AB). FIRST with Underwriters' Approval on 3 AG and 3 AB fuses. FIRST with Extractor Posts, Breakerettes, Circuit Testers and Neon Indicators, Non-Filament Signal Indicators, Beryllium Copper Fuse Clips, low cost Mercury Switches, and many allied developments for the Armed Services.



Littelfuse products are available through leading electrical distributors. For distributor nearest you or solution to your special circuit protection problems, write to Littelfuse Incorporated, 4757 N. Ravenswood Ave., Chicago 40, Illinois.

Plants in Chicago and El Monte, California

# QUALITY IS A CHALLENGE

Quality is a challenge which the weak must decline but V CIRCUIT P which the strong joyfully accept. The acceptance demands courageous planning and resourceful thinking. It demands patient research and unending vigilance against the temptation of profitable inferiority; it demands an unbending desire to serve well and the will to pursue unwaveringly the desired standards of perfection. RCUIT SA

The path of quality is the road to victorious accomplishment.

President

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LITTELFUSE







\*THE EXTRA

TRI CLAD

Special motors can be custom built in Tri-Clad design for your problem

Your exceptional drive requirements may call for an induction motor specially designed to the job. Whatever its rating, it can generally be built with many of the Tri-Clad motor's strong points, such as enclosed upper portion, smooth cast-iron end shields, windings of Formex wire, and double-end ventilation.

rpm

duc

pro

in t

General Electric's special motor engineering has produced the world's fastest motor, the world's strongest motor, and many other tradition-breaking designs. We'll welcome your unusual problems.

HERE'S TODAY'S WIDER RANGE OF STANDARD SIZES

TRICLAD Type KG

(High starting torque, low starting current)

TRICLAD Type KG

(High starting torque, low starting current)



TRI CLAD Type KR

(High starting torque, high

Available to 100 hp in speeds required for high-slip flywheel drive (punch press, etc.)

Buy all the BONDS you can - and keep all you buy

# can have it, \*too

# PROTECTION OF CONSTRUCTION

# G-E STANDARD Tri-Clad Induction Motors Now Available to 2000 hp

For that important big drive (up to 2000 hp, 1800 rpm) you can now get a G-E standard Tri-Clad induction motor. All the protective features that have proved so valuable to service continuity and long life in the more widely used sizes are included:

EXTRA PROTECTION FROM PHYSICAL DAMAGE
—Cast-iron construction with upper portion completely

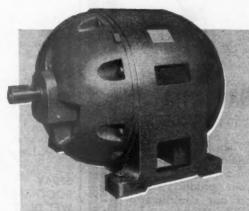
enclosed to keep out falling objects, dripping liquids. Streamline, cast-iron end shields. Corrosion-resisting finish.

EXTRA PROTECTION FROM ELECTRICAL BREAK-DOWN—Windings of Formex\* wire are solidly bonded with synthetic resins strongly resistant to heat, oil, and moisture. Formex wire insulation stands up strongly under abrasion or "heat-shock."

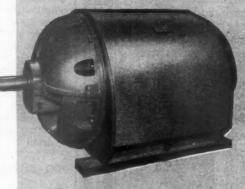
EXTRA PROTECTION FROM OPERATING WEAR AND TEAR—Available with either sleeve or ball bearings—in dust-tight housings. Sleeve-bearing design is a further refinement of well-proved Tri-Clad motor bearing proportions, efficiently lubricated, with "air seal" to insure oil tightness of the housing.

The Tri-Clad, in its wide range of types and sizes, is G.E.'s most widely used (integral-hp) motor. Chances are that there's a Tri-Clad to meet your requirements "on the nose." For information on General Electric's complete line of Tri-Clad motors, ask for GEA-3580. General Electric Company, Schenectady 5, N. Y.

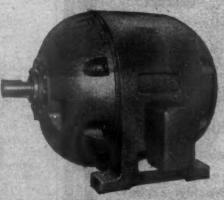
\*Trade-mark reg. U.S. Pat. Off.



Typical large-size sleeve-bearing Tri-Clad polyphase motor, new standard up to 2000 horsepower.



Modified cast-iron frame construction used for certain large sixes of the extended Tri-Clad motor line.



Separable housing construction used for largesize ball- or roller-bearing Tri-Cled motors. Roller bearings are standard at coupling and.

GENERAL & ELECTRIC



...in the hard-to-do

When you are up against a problem on a special part for your product, call on our consultant service.We'll be glad to help at no obligation to you. Our engineering experience and our specially designed machines are both geared to making the hard-to-make special parts. And usually our cold-forged specialties will save you money.



This Decimal Equivalents wall chart is accurate to four places and signalled in three colors. Yours at no cost or obligation. Just send us your name, title and address.

See our Catalog in Sweet's File for Product Designers

### JOHN HASSALL INC.

Specialists in Cold-Forging Since 1850

404 Oakland St. Brooklyn 22, N.Y.



SCREW DRIVER SET

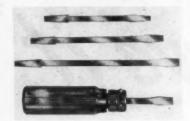
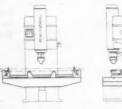


ILLUSTRATION shows Day Tool Driver set which is made in two sizes. Small size consists of a tool driver with simplified locking nut and four blades ranging from 1½" to 5½" in length. Large size consists of driver with locking nut and four blades ranging from 8" to 14" in length. Handle is of plastic simplified alloy steel locking device for locking blade in handle. Blades are drop-forged. Speedway Engineering Co., 2479 Fletcher Drive, Los Angeles, Calif.

SPRAY **BOOTHS &** WET DUST COLLECTING LINE of metal spray booths and wet dust collecting equipment is announced by Metallizing Engineering

Co., Long Island City 1, New York, designed, engineered and built for handling sprayed metal dust. Featured in the line is a lathe exhaust unit which is mounted directly on the lathe carriage and moves with it; also, wet collectors and water wash spray booths which gather metal particles in a sludge sump where valuable dust may be reclaimed for salvage. Booths include sloping rear wall, open type work table, down draft, dust trap and cleanout door. Described in detail in Bulletin 43A.

BROACHING AND STRAIGHTENING



INCREASED flexibility of use has been provided on its "Junior" hydraulic broaching and assembly presses by Colonial Broach Co., Detroit 13, Mich., through additional equipment enabling the press to be used interchangeably also for straightening operations. Changeover from assembly or broaching jobs to straightening work is accomplished by placing self-contained single unit roller type straightening fixture on platen of machine as shown in accompanying illustration. In general, machines will be found most useful for straightening work on small diameter parts. Straightening fixtures are available for all sizes of Colonial Junior presses. Machine opera-

tion is hydraulic, with infinitely variable (within capacity of machine) ram speed and pressure controls available if de-

(Continued on page 160)

GOES YOUR YARDAGE GO YOUR SHOVEL REPLACEMENT COSTS

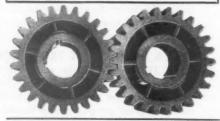
We guarantee you the most shovel service for your dollars with RAZOR-BACK, the only fully modern shovels with tapered blade thickness and tubular shank—giving full 13 gauge thickness and strength up the middle to meet the wear and strain, but only 15 gauge overall weight and better balance to speed the work. Send for CATALOG and name of nearest distributor.



THE UNION FORK & HOE CO. 691 Hocking St., Columbus 15, Ohio

Only Shovel with a Backbone Industrial Forks, Asphalt & Road Rakes

### SIMONDS GEARS

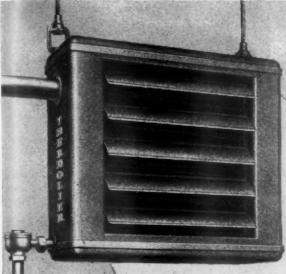


QUALITY GEARS OF ALL TYPES .... MADE TO YOUR ORDER

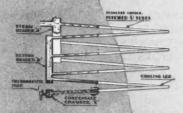
SPUR · BEVEL · MITRE WORMS · WORM GEARS · RACKS Cast and Forged Steel, Gray Iron. Bronze, Silent Steel, Rawhide, Bakelite

Distributors of RAMSEY Silent Chain Drives & Couplings

THE SIMONDS EAR & MFG. CO. 25TH AT LIBERTY ITTSBURGH 22, PA.



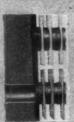
### THERMOLIER'S SUPERIOR FEATURES



INTERNAL COOLING LEG assures continuous drainage of condensate and makes a simple thermostatic trap practical. It is equal to a run of more than 100 feet of ordinary exterior cooling leg piping.



BUILT-IN EXPANSION PROVISIONS. The "U" type tubes allow expansion and contraction, case damaging strains.



LEAKPROOF TUBE-TO-HEADER CONSTRUCTION. Joints made by the expanding method assure safety and durability.



SUPERIOR HEATING ELEMENT. Square copper fins on strong seamless copper tubing provide 24% more radiating surface.

Other Points of Thermolier Superiority
Tube design minimizes dirt collection \* built-in
drainage \* continuous rated capacity \* heavy
frame gives greater rigidity \* motor and fan
meet specific Thermolier requirements \* simple
piping connections \* adjustable hangers facilitate erection \* packed for easy installation.

# THERMOLIERS are back again!

Now is the time to do something about your unsatisfactory heating equipment, before last winter's headaches are repeated.

Here's good news for you. GRINNELL is making THERMOLIERS again. They are the same efficient, engineered unit heaters that have been delivering more heat at less cost for thousands of satisfied customers for years.

Talk over your heating problems with a Grinnell Engineer. He'll show you how Thermoliers distribute heat uniformly to every square foot of your buildings, improve employee morale and output and save up to 27% of still-scarce fuel.

Thermoliers' 12 points of superiority make them the logical choice in unit heaters. Ask for the new Grinnell Thermolier catalog 6-E. It gives all the details of construction, application, capacities and installation. Grinnell Company, Inc., Executive Offices, Providence 1, R. I. Branch offices in principal cities.



Thermolier Unit Heaters
FOR FULL VALUE FROM FUEL DOLLARS



In the days ahead, competition will be keen. Improved abrasives and improved techniques will be needed to give added appeal, added value to your products.

When abrasive problems come up, it pays to call on Armour. Experienced technicians will help you improve quality, reduce costs. They'll gladly demonstrate the product and the method which does your job best.

As for the coated abrasives you'll need, specialized Armour products will do the work more efficiently, more economically. The faster, sharper, cooler-cutting Armourclad Fibre Combination Sanding Disc is only one of Armour's complete line of better metal-working abrasives.

Victory is ours, and great things are in the making for tomorrow! You can count on Armour abrasives to help you make your new products better than ever.

For practical abrasive advice, write or call

# Armour Sandpaper Works

DIVISION OF ARMOUR AND COMPANY . 1355 WEST 31ST STREET, CHICAGO 9, ILLINOIS

### SMALL OPEN BLADE SWITCH



SHALL single pole open blade switch announced by Acro Electric Co., Cleveland 14, Ohio, is designed for compactness and long life. Engineered with beryllium rolling spring, the overall dimensions are approximately 2 1/32" x 10/16" x 23/64". Contact arrangements are for normally open, normally closed, or double throw circuits. Tests of switches are claimed to have shown a mechanical life expectancy of more than ten million operations. Standard operating pressure at the end of the blade is only 3 to 6 oz. Rated at 15 amp., 115 volts ac.

### ANNOUNCE INDUSTRIAL MECHANICS' MIRRORS

LINE of mirrors which are mirror tools and can be applied to most requirements in the industrial field are

announced by the Ullman Products Co., 857 Fourth Ave., Brooklyn, N. Y. While the manufacturer calls his product "inspection mirrors" it is pointed out that this is a misnomer—they are mechanics tools, and as they have a variety of uses they should be named Mechanics' mirrors. The mirrors are available in round, oval and rectangular shapes.

### BALL BUSHING



BALL bushing that permits unlimited travel of reciprocating mechanical members that may be either round or square, or variations of these shapes, is announced by Thriftmaster Products Divn. of Thomson Industries, Inc., 29-05 Review Ave., Long Island City, N. Y. System of ball circuits can be varied for varying load capacities and shapes of bearing members. Thus it is possible to have a bearing of considerable length or of a square, hexagon or octagonal section. Basically the Ball Bushing contains a series of ball circuits. One side of circuit carries the bearing load, the other side returning the balls in a clearance provided in the outer race member of the bushing. Phenomenally free movement is said to be obtained.

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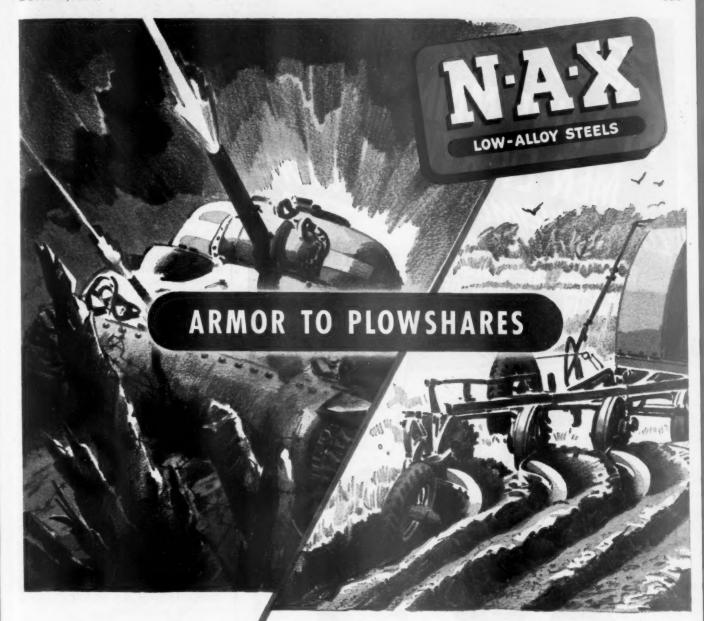
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It has already happened.... One of the fine-grained N-A-X low-alloy steels - steels that have provided armor for tanks and landing craft, frames for all jeeps, and vital parts for scores of fighting vehicles - has been "beaten into plowshares" to produce priority equipment for agriculture.

The particular steel was N-A-X 9120, a carburizing grade. Its ready response to carburization and heat-treatment is utilized to produce a farm implement that is "tough to the core" and that has the required surface hardness to resist abrasion and wear.

The conversion of an N-A-X low-alloy steel from tools of war to tools of peace is not surprising . . . just prophetic. For the same wide range of desirable properties that made these fine-grained steels a great military material recommends their use in civilian products.

GREAT STEELS FROM GREAT LAKES

# GREAT LAKES STEEL Corporation

N-A-X ALLOY DIVISION . DETROIT 18, MICHIGAN UNIT OF NATIONAL STEEL CORPORATION



Throughout the war, Lunkenheimer Distributors did a fine job in helping to maintain industrial valve installations at top efficiency.

Located in leading industrial centers, our Distributors have provided quick, readily accessible, and complete valve service throughout the nation.

In addition to supplying high quality, long life Lunkenheimer Valves, they have assisted maintenance men in the solution of both operating and maintenance problems.

This service isn't new...Lunkenheimer Distributors have been rendering it for many years in the past, and will continue doing so in the future. For this Distributor set-up is a basic, permanent part of the Lunkenheimer way—the better service way.

You can always depend on your nearby Lunkenheimer Distributor for expert, experienced aid in the solution of valve maintenance and operating problems. Call on him!

The Lunkenheimer Co., Cincinnati 14, Ohio, U. S. A. (Offices: New York 13, Chicago 6, Boston 10, Philadelphia 7. Export Department: 318-322 Hudson St., New York 13, N. Y.)

### LUNKENHEIMER VALVES

BRONZE, IRON, STEEL AND CORROSION RESISTANT ALLOY VALVES, 125 TO 2500 LB. S. P. BOILER MOUNTINGS, LUBRICATING DEVICES, AIRCRAFT FITTINGS

### COMPAR TRANSPARENT GLOVE



Chance Vought Aircraft plant wearing oil- and solvent-proof compar gloves to protect their hands from zinc chromate bath. The gloves are made from vinyl resin derivative by Resistoflex Corp., Belleville, N. J. They are said to give complete protection as they are impervious to all organic fluid sand many that are inorganic, and to be highly abrasion and tear resistant. Curved fingers of gloves give freedom of hand movement. Containing no sulphur or other ingredients that might tarnish metal surfaces, gloves are said to be ideal for handling finely finished metal parts or for gripping controls.

FERROX SAFETY FLOOR COVERING SAFETY floor covering announced by American Abrasive Metals Co. of Irvington, N. J., may be ap-

plied by trowel or spray gun. Ferrox is name of the covering material. It is a synthetic resin containing an abrasive. It will adhere to metal, concrete, or wood surfaces. Where principally foot traffic is encountered it provides a serviceable, low cost safety service. It is applied about 1/32 of an inch thick. Coverage is 50 sq. ft. per gallon.

### NEW KNURLING TOOL

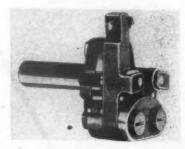


ILLUSTRATION shows new Model K knurling tool developed by Boyer-Schultze Corp., 2110 Walnut St., Chicago, Ill., as new addition to its line of screw machine tools. One of advantages of tool is in knurling between and behind shoulders when necessary. Operating from the center line of materials, regardless of diameter, "knurling-climb" is eliminated. Tool is made in three sizes, OOK, O" min. to %" max.; OK, 3/16" min. to 5%" max.; 2K, ¼" min. to 7%" maximum.

(Continued on page 164)

# it's new! SARAN braid

### for better electrical insulation

Cable and wire braid with insulating qualities far superior to any other material—that's the stimulating news brought by this and outgement of Saran braid. It marks an important advance in wire protection and provide long-sought answers to many troublesome problems.

Here is a braid that resists abrasion—Saran is permanently tough and durable It is fungus and mildew proof—long life is the rule even under adverse serice conditions. And, more important to the electrical industry, Saran deficiency moisture and oil—enemies that attack, and soon rot, ordinary cable covering

These better insulating properties point to the use of Saran in myria applications\* extending all the way from simple extension cords to intrical wires in radio and radar. If you would like to know more about its value to you, write for further details.

let's work it out together

Success in plastics is not a one-man nor even a one-indust job. It calls for the cooperation and combined skill of man facturer or designer plus fabricator plus raw materials pr ducer. Working together, this team saves time and money ar puts plastics to work successfully. Call us—we'll do our par

resists
rot,
oil,
moisture,
abrasion,
heat,
cold

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PRESENT AND POTENTIAL USES:\* Braided covering for wire and cable of all kinds. Especially valuable in guarding against abrasion in such applications as extension cords, etc. Many uses for cable such as household appliance cord that is exposed to moisture and consequent rendering of shock. Resistant to rot caused by entrapped moisture or oil in such applications as automotive wiring.

PROPERTIES: Combines toughness with flexibility even at temperature extremes. Flexural strength, p.s.i. 15,000 to 17,000. Highly resistant to broad range of chemicals. Water absorption less than 0.1. Nonflammable. Excellent electrical insulator. Not subject to distortion of flow at contact points. Available in many colors. Softening point 240°-280° F.

THE DOW CHEMICAL COMPANY . MIDLAND, MICHIGAN

New York · Boston · Philadelphia · Washington · Cleveland · Detroit Chicago · St. Louis · Houston · San Francisco · Los Angeles · Seattle



STYRON • STYRALOY • ETHOCEL • ETHOCEL SHEETING SARAN • SARAN FILM • STRIPCOAT

QUICKLY AVAILABLE AT A STOCK POINT NEAR YOU!



Armour's 332 stock points mean fast, dependable service for your present and future glycerine needs.

CHEMICALLY PURE or U. S. P. . . . A high grade, water-white glycerine meeting the requirements of the United States Pharmacopoeia. Suitable for use in foods, pharmaceuticals, cosmetics or for any

purpose demanding highest quality. Specific gravity is 1.249- 25°C./25°C.

HIGH GRAVITY ... A pale yellow glycerine for industrial purposes with a specific gravity of 1.262- 15.5°C./15.5°C.

DYNAMITE...A yellow glycerine made especially for the explosives trade. It has a specific gravity of 1.262- 15.5°C./15.5°C.

YELLOW DISTILLED . . . A yellow glycerine for industrial purposes with a specific gravity of 1.259- 15.5°C./15.5°C.

ARMOUR AND COMPANY CHICAGO 9. ILLINOIS

# **FILCO FILTER PAPERS**

Assure Uniformity of Products



For batch control in processing raw materials to finished products, you can rely on "Engineered" Filco Filter Papers. Any order can be redesigned to fit your specific need and particular make of filter. Doubt and guess-work are eliminated from the process. Our Laboratory Technicians are at your service. Write for FREE Working Samples.

Specialists in the Manufacture of:

Filter Paper, Cloth, and Asbestos Pads. Filter Presses.

Pumps. Stainless Steel Storage and Mixing Tanks.

Easy-Ride Gravity Roller Conveyors.



FAUCET WASHER



ILLUSTRATION shows new Dumaco "Little Wonder Faucet Washer." Maker. states it is "simply applied with the fingers." Washer has permanent seat with positive grip and rotating disc action. It is said to give dependable service and eliminate pipe vibration. Washer is available in three sizes. Durst Manufacturing Co., 426 Broadway, New York, N. Y.

"CASE HARDENED" GRINDING WHEELS

METHOD of giving grinding wheels "case hardening" that is said to compare favor-

ably with the hard-ness of diamond wheel, is offered by Bridgeport Safety Emery Wheel Co., Inc., Bridgeport, Conn. It is known as BuXite process which coats the grain of the wheel. Under pressure and heat of grinding, coating changes into a "case" or surface layer of such extreme hardness that it is said to reduce sintered carbide tools and other superhard metals with unusual rapidity. BuXite wheel is said to have from 5 to 20 times the life of an unprocessed wheel. The wheels are said to give good results on tool steels, cast iron, brass-all metals and alloys whether employed in precision grinding or in roughing out.

WORK BENCH-WORK TABLE



ILLUSTRATION shows Equipto 12gauge steel work bench announced by Aurora Equipment Co., Aurora, Ill. It is available without back and side railings for use as a packing bench. Bench is said to be suitable for both work bench use and for supporting light machine tools. It is available in 42 inch and 6 ft. lengths, 34" high and 28" deep. Can be furnished as plain work bench with 12-inch gauge steel top and with bottom tray, back and side railings, drawers with padlock attachment, and adjustable 3-compartment tray for drawer.

(Continued on page 168)

# Of course it's Brass

# FOR THE NAVY'S BIGGEST CARTRIDGE CASES

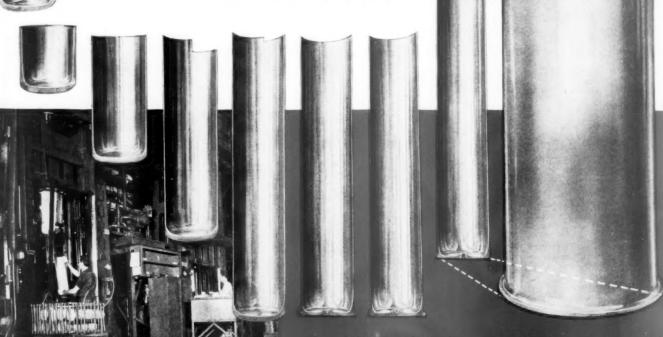
It's Brass because no other metal has such fabricating possibilities. The Norris Stamping and Manufacturing Company of Los Angeles has successfully produced thousands on thousands of these 38.2"-long cases for the Navy's newest and largest semi-fixed ammunition, servicing a light cruiser's main battery of 6-inch, 47-caliber guns.

The American Brass Company supplied the 31.5-pound discs for this job; 12.75" diameter by .800" thick, made of 70-30 Anaconda Cartridge Brass. Composition, dimensions and anneal were held to unusually close limits—determined by the operations shown in the cut-away sections below. Surface finish, too, was important, for the finished case had to be smooth and free from defects.

It's on jobs like this that The American Brass Company's "century of metallurgical experience" may mean the difference between an ordinary or an *outstanding* finished product.

### THE AMERICAN BRASS COMPANY

General Offices: Waterbury 88, Connecticut
Subsidiary of Anaconda Copper Mining Company
In Canada: Anaconda American Brass Ltd., New Toronto, Ont.



One of the many hydraulic presses used for drawing 38.2"-long brass cartridge cases for the Navy's 6-inch, 47-caliber guns. Norris Stamping and Manufacturing Company, Los Angeles.

ANACONDA Anaconda Copper, Brass & Brongo

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Only a pound of Brass...

# but what an example of workability!

This assortment of bellows is typical of those made by The Fulton Sylphon Co., of Knoxville, Tennessee, for more than 40 years. Applications of such thinwall metal bellows in pressure and thermostatic devices are well known—in mechanical refrigerators, heating systems, automobiles, Diesel and aircraft engines, etc. But their availability, in sizes from 15/32" to 12" diameter, is a tribute to manufacturing ingenuity and precision . . . and to Brass. For Brass is the metal used for the vast majority of Sylphon Bellows for widely different, but equally important reasons:

In service, Brass provides corrosion resistance and the high endurance limit necessary to resist millions of cycles of reversed stress.

In production, Brass provides a combination of metal-working properties unequalled by any other metal. Starting from a flat disc, the metal is subjected to a series of cupping and drawing operations to produce a thin-wall tube which is subsequently formed into a deeply corrugated, seamless, precision unit. The cumulative effect of this cold working enhances the physical properties of the metal and contributes long life and dependability to the finished bellows.

Knowing the fabricating operations involved, The American Brass Company supplies Brass, Phosphor Bronze and Beryllium Copper for Fulton Sylphon Bellows in the composition and form best suited to meet the unusually exacting requirements.

45158

### THE AMERICAN BRASS COMPANY

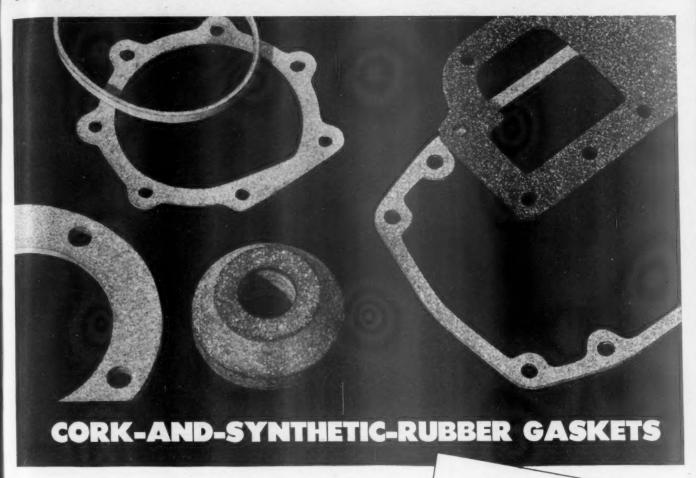
General Offices: Waterbury 88, Connecticut
Subsidiary of Anaconda Copper Mining Company
In Canada: Anaconda American Brass Ltd., New Toronto, Ont.

Here are shown several operations in the production of a Fulton Sylphon Bellows:

After the titual take is drawn, wantly with a wall about 5005, it is focused into a bellows by either of two methods: In mechanical rull-forming, a number of broad carrugations are seccessively despend and nerrowed with suitable wills, in hydraulically-formed bellows, the tube is expanded autvardy into a collepsible die, permitting the sheed and bellows to be formed as one unit is one operation.

ANACONDA

ANAC



### ... for difficult sealing problems

THE unique combination of physical properties found in Armstrong's Cork-and-Synthetic-Rubber Compositions solves many sealing problems where other gasket materials fail. Compressibility without sideflow and lasting resilience are supplied by the cork content of these compositions. The synthetic rubber makes them impervious to specific liquids and gases . . . assures high tensile strength, contributes added resiliency.

Typical applications of Armstrong's Cork-and-Synthetic-Rubber Compositions include sealing cast surfaces without machining, sealing fluids while maintaining a rigid metal-to-metal assembly, sealing aromatic fuels with light spring pressure, and many others.

By using different types of cork granules and various kinds of synthetic rubber, Armstrong compounds a wide range of these specialized gasket materials. In each composition, sealing characteristics are controlled to meet specific applications exactly.

For specification data on Armstrong's Cork-and-Synthetic-Rubber Gaskets, send today for your free copy of "Gaskets, Packings, and Seals." Address Armstrong Cork Company, Gaskets and Packings Department, 7210 Arch Street, Lancaster, Pennsylvania.

### EXPERT ENGINEERING SERVICE ON YOUR GASKET PROBLEMS

If you have a specialized sealing problem, consult your Armstrong Gasket
Engineer. He will give you expert, unArmstrong's years of experience solving a wide range of sealing problems.
An Armstrong Office is conveniently
today. No obligation, of course.

ARMSTRONG'S INDUSTRIAL PRODUCTS: GASKETS, PACK-INGS, SEALS, and MECHANICAL SPECIALTIES of Cork, Synthetic Rubber Compounds, Cork-and-Synthetic-Rubber Compositions, Cork-and-Natural-Rubber Compositions, Fiber-Type Materials, and Rag Felt Papers • RESILIENT SURFACINGS for desks, bars, counters, etc. • FLOORINGS for buses, railway cars, etc. • TEXTILE MILL SUPPLIES • SHOE MATERIALS • ADHESIVES • GLASS INSULATORS for communications, power

ARMSTRONG'S
GASKETS · PACKINGS
AND SEALS

Oca



### BIG BANK OF ROPER PUMPS SPEED HANDLING OF OILS

This big bank of Roper pumps at Wright Aeronautical Corporation, moves thousands of gallons of cutting oils to huge machine tool batteries. Through delivery lines that run from a central station directly to the scene of operation, they quickly dispatch a variety of oils to serve production requirements. It's a pump job engineered by Roper in collaboration with Wright engineers to help maintain speedy production of vital aircraft engines.

#### JOB FACTS

Roper Series F pumps used on job, each engineered to handle a variety of cutting oils.

Rated capacity 20 g.p.m. with relief valve set at 150 lbs. All are mounted on individual bed plates with 3 H. P., 1750 r.p.m. motors controlled by pressure switches. Pumps can be disassembled gears, case and bearings inspected or re-

placed — without disturbing pipe connections or mountings



Roper engineers are ready to belp solve your pumping problems.

Write for Catalog
No. 10-37

GEO. D. ROPER CORP., ROCKFORD, ILL.



### PORTABLE INDUSTRIAL WASHING MACHINE

PORTABLE industrial washing machine made by Industrial Washing Machine Corp., New Brunswick, N. J., known as Model CBH, consists of a tank and housing. Mounted on the housing are



electric immersion heaters, a pump and motor, valves, gauges, etc. Parts to be cleaned are placed in square mesh basket 16" x 16". Manufacturer says machine can be used as dip tank for wax or oil dipping or parts, by removal of basket. Unit can be used for cleaning stampings, ball bearings, castings, etc. Printed matter available.

### DRILLS HOLES BETWEEN 11/16" CENTERS

NEW six-spindle universally adjustable multiple spindle drilling attachment that will drill one to six holes

simultaneously in one stroke of drill press is announced by The Commander Mfg. Co., 4225 West Kinzie St., Chicago, Ill. It is known as the Multi-Drill. It comprises a driving head with six movable spindles each of which is located by an individual radially adjustable arm. The design permits the positioning of drills up to 17/64" diameter in any hole pattern including a straight line, within a 5" diameter circle with minimum distance between centers of 11/16" Housing for drive gears and the supporting frame and adapters are of special high strength aluminum alloy. Attachment weighs only 13 pounds.

### TENSION TESTER FOR PLASTICS AND NEW WEDGE GRIP

TESTING equipment especially designed for plastics has been developed by the Baldwin Locomotive Works' Southwark Division, Eddystone, Pa. Grip on the Templin principle for use with the



universal testing machine is of 5,000 lbs. capacity, and weighs only 4¼ pounds. It is self-aligning, swiveling and laterally, and its basic principle makes it particularly good for gripping the glass-hard surfaces of some plastics. Another new development of Baldwin-Southwark is new wedge grip with a replaceable file face for use in testing machines up to 300,000 lbs. capacity. This feature saves the replacement of an entire grip when teeth are worn or broken. The new grips make it practical to keep a stock of faces adaptable to various types of material that may be tested.

(Continued on page 170)

### SAFETY

(Reg. Trade Mark)

### WEDGE GRIP LETTERS & FIGURES

- · No Spalling!
- · No Mushrooming



Pat. No. 2,089,794

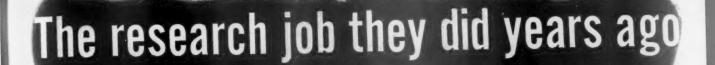
- · For tough stamping jobs.
- Deeper impression with less exertion
- Any size character from 1/16" to 1"
- 25% to 50% more service

WRITE FOR LITERATURE
HELP PREVENT AN ACCIDENT TODAY.





D





of maintenance dollars today

OVER a decade ago, Airco's research engineers developed a new process for cleaning and dehydrating steel surfaces with the oxyacetylene flame . . . a simple, inexpensive way to make new paint last longer on steel structures. Today, this modern flame cleaning process has become an established time-saving maintenance method for bridges, storage tanks, signal towers, and all forms of structural work.

This Airco research achievement is only one of many time- and costsaving techniques originated in Airco research laboratories. Other equally promising innovations are now in development - in accordance with Airco's constant purpose of increasing oxygen's usefulness to industry.

 An interesting free booklet — "Oxygen — Indispensable Servant of Industry" - describes recent Airco research developments and other phases of Airco's complete oxygen service. For a free copy, write to Dept. PR at the New York office.



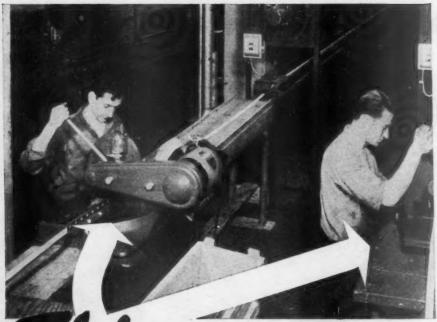
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General Offices: 60 E. 42nd St., NEW YORK 17, N.Y. Texes: Magnelia Airce Gas Products Co. • General Offices: Houston 1, Texas Offices in all Principal Cities

AIRCO OXYGEN GUARANTEED 99.5% PURE

IN THE CYLINDER



# production-line operation simplified

### by utilizing a standard Delta tool

• The above illustration shows how R.D. Werner Co., Inc., New York, N. Y., uses a standard Delta-Milwaukee Machine Tool, to get an efficient sequence of operations in the dry extrusion process of making thermal plastics for decorative and structural shapes.

A compact Delta-Milwaukee Cut-Off Machine supplements the production line, so that the continuous strip material can be cut to proper lengths as it comes from the forming machine.

This is representative of the ways in which hundreds of plants have employed Delta's modern, flexible approach to tooling - on a wide variety of operations.

Low-cost Delta-Milwaukee Machine Tools and the ingenuity of your engineers provide a working combination that results in practical, economical solutions to many production problems. Delta's savings in cost, weight, and space are not made at the expense of quality, but are due to advanced design and modern production methods applied to a large volume of standard models.

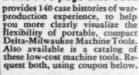
Perhaps a study of the versatility of Delta-Milwaukee Machine Tools may suggest ways of cutting your investment risk in retooling.



### Production ideas that get results - typical of practices you can profitably employ:

- 1. Use standard, low-cost Delta components to build high-production, specialpurpose machines — quickly convertible to other uses when requirements change.
- 2. Modernize your present machines that are rapidly approaching obsolescence. by replacing worn elements with regular, stock-model Delta components.
- 3. Utilize the portability and compactness of Delta-Milwaukee Machine Tools, to revise or supplement productionline layouts for balanced output,

Delta's 76-page Blue Book



### TEAR OUT COUPON AND MAIL TODAY!

-	
	ELTA MANUFACTURING CO. Vienna Ave., Milwaukee 1, Wis.
	send me my free copies of Delta's 76-page ook and catalog of low-cost machine tools.
Name	******************************
Position	
Compan	y,
Address	
City	() State

MA-24

### LIGHTWEIGHT R. R. INSPECTION CAR



LIGHT-WEIGHT is the outstanding feature of the one man railway inspection car announced by Fairmont Railway Motors, Inc., Fairmont, Minn. Unwanted deadweight has been eliminated by use of Plymetl and Phemaloid and light aluminum alloy frame. Plymetl is combination of metal and plywood. Phemaloid is a light yet heavy duty plywood. With handles extended the rear lift is only 98 pounds, making it easy for one man to set off or re-rail the car: Power is supplied by % hp, 2 cycle single cylinder Fairmont water cooled engine.

NEW BLACK TIRE PAINT

A NEW black tire paint. marketed in one or five gallon cans is announced by the B. F. Goodrich Company, Akron, Ohio. It is claimed up to nine

gallons of paint can be obtained from one gallon of the concentration when mixed with gasoline. Its uses include application to tires after repairs or recapping to restore "factory finish" and use after wash or wax jobs to touch up the tires. Floor boards and running board matting may be improved in appearance and given longer life by the paint.

### CENTRIFUGAL CASTING MACHINE



NEW Centri-Meco centrifugal casting machine is announced by the Centrifugal Machine and Engineering Co., 703 Jackson Court, Kalamazoo, Mich. The new machine which features the Miracle-Hub (trade-name) is designed to be heat-free in the bearing area during continuous use of the machine with permanent molds attached directly to the heavy mounting-plate. New type hub is said to be so constructed that the temperature in the bearing area never exceeds 125 deg. F. It is claimed that centrifugal castings-due to the method by which they are cast, are sounder and have higher physical properties because when the process is followed through correctly there are no hidden defects such as gas pockets, porosit, etc.

(Continued on page 174)

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Les, the Kidde Water Extinguisher eliminates the fuss and bother of annual recharging. It gets its power-not from the reaction of chemicals that may deteriorate—but from a hermetically sealed cartridge of carbon dioxide that retains its full water-propelling efficiency for years ... and when used does no more harm than water.

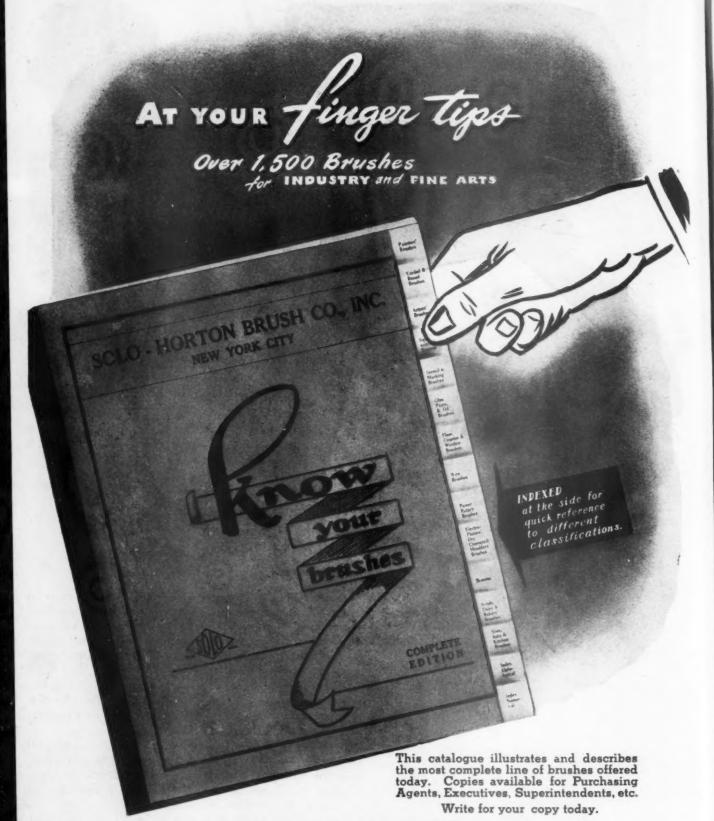
And when recharging is needed, after use, it's a quick, safe, simple operation. No chemicals to handle...no risk of acid burns. Just refill with water and slip in a replacement cartridge!

For locations where low temperatures are encountered, the Kidde Anti-Freeze Extinguisher - identical in construction with the Water Extinguisher - offers the same freedom from need of annual recharging, plus ability to function at temperatures as low as -40° F.

Get the facts today on Kidde Water Extinguisher and Anti-Freeze Extinguishers.

Walter Kidde & Company, Inc. 1050 Main Street, Belleville 9, New Jersey

OCTO



THE SOLO-HORTON BRUSH CO., INC.

135 WEST 19TH . Dept. A-1 . NEW YORK CITY 11



# PRECISION STAMPINGS

### in production quantities

Our quality of workmanship and dependable deliveries are quickly developing this service into an important part of our business. Our equipment enables us to handle work from bench to 100-ton press size. Send us sketches, blueprints or samples and let us quote you. If your requirements are not immediate, file this ad for future reference.

LAMINATED SHIM COMPANY, INCORPORATED

90 Union Street

Glenbrook, Conn.





SEE OUR CATALOG IN SWEET'S

### BRANCHES



### LIGHTED WALL SWITCH PLATE

WALL plate of molded Plaskon, equipped with a tiny lamp that glows when the lights it controls are out and goes out automatically when the lights are switched on, is being mar-



keted by Associated ProJects Co., lumbus, Ohio. It is called LumiNite. Tests indicate that it uses less than two cents worth of electric current per year. Switch plates are easy to connect and are available for combining into multiple plates where two or more switches are located.

WELDING WROUGHT CAST AND CLAD MTL.

PRODUCTION of a new Inconel Welding electrode suitable for both ac and dc welding of wrought Inconel,

cast Inconel and the Inconel side of Inconel-olad steel, is announced by the International Nickel Co., 67 Wall St., New York, N. Y. The new rod is said to be regarded by engineers as a long step forward in the development of welding electrodes for use with both alternating and direct currents. Characterized by improved arcing qualities, simplicity of slag removal, and an ability to make crack-free welds in any thickness, the electrode may be used on either straight or reversed polarity with direct current motor generator sets.

### EMBOSSING-DEBOSSING DIES



BY combining metal spraying and pantographic engraving processes, New Method Steel Stamps, Inc., Detroit 7, Mich., has evolved method for rapidly producing male and female embossing and debossing dies of consistently high degree of mating accuracy. The procedure can be so carefully controlled as to assure the proper clearance for any gage of sheet metal between the completed, mating dies. The accurate mating of the male and female dies developed is said to insure that there will be no shear in the sheet metal embossed with them.

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The New KENNAMILL "UNIVERSAL" FACE MILL WITH WEDGED-IN, SOLID

KENNAMETAL BLADES



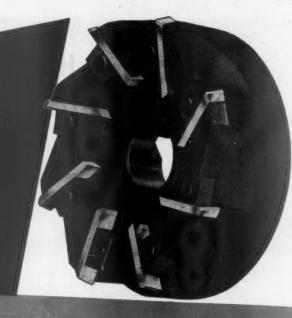
ADAPTABLE FOR HIGH RATE MILLING ON ALL TYPES OF METAL

"Universal" Cutters for milling different materials vary only in the grade of Kennametal used in the blades, and the cutting angles. Kennametal blades re wedged into the body at fixed angles of 4° positive radial and 7° negative axial letors being inserted, they are ground to provide a radial rake suitable for the materials be milled—7° negative for steel; 5° positive for cast fron, brass, and bronze; 14° positive for aluminum and magnesium alloys. Only the blades are ground—the steel body a permanent tool holder.



BLADES ARE RESHARPENED ON SURFACE GRINDER

Kennametal blades are reground uniformly to proper and surface grinder, while being held a simple jig. Illustration shows Kennametal blade in jig having top land ground, thich, in conjunction with fixed blade angle a body, provides proper radial rake. Jig eats on another face for grinding clearance ingle, and on a third face to grind face cuting edge angle. For finish cuts the face of the cutter is touched up on a cutter grinder. It is touched up on a cutter grinder. It is required for conventional cutters, and it is required for conventional cutters. It is a seven by having resharpmed spares ready for quick replacement.



- **PRODUCTION COSTS**
- **TOOLING COSTS**
- OFF-THE-JOB TIME
- **GRINDING EXPENSE**

The Kennamill "Universal" Face Mill can be used for milling different materials, at high rates of metal removal, simply by interchanging blades having the right grade of Kennametal and proper cutting angles. Advanceable, solid Kennametal blades are wedged into the sturdy steel body at fixed angles, after having been ground on the edge to provide an effective cutting angle—negative radial rake for steel; positive radial rake for cast-iron and non-ferrous materials.

All design features of this cutter contribute to the possibility of removing a large volume of metal between regrinds. Radially set blades, rigidly supported, maintain their edge longer; and, because the blades are wedged in instead of brazed on, brazing strains are eliminated, either initially or during grinding. Hogging cuts, up to a depth of \( \frac{\psi}{\chi} \), are entirely feasible. Ample chip accommodation is provided for all depths of cuts.

The solid Kennametal blades can be reground on a surface grinder, as described at the left, thus eliminating need for special cutter grinders, and greatly reducing off-the-job-time required for reconditioning cutters having brazed-in tips. Blades can be resharpened many times, then used in smaller "Universal" Cutters.

The Kennamill "Universal" Face Mill is available in four sizes—4", 6", 8", and 10". Prices and particulars are yours for the asking.



KENNAMETAL Suc., LATROBE. PA.

OCTO



SPEEDY, careful maintenance keeps the giant Pan American World Airways' Flying Clippers operating safely and on time. To facilitate overhauling the mighty motors, PAA has selected Bond Dual-Wheel Casters for its engine stands.

Bond Dual-Wheel Casters, with oscillating axle, insure an even distribution of load, eliminate sudden tilting and reduce shock. Danger of

damage to the engine is eliminated and its ease of mobility to all parts of the shop is greatly increased. PAA also specifies Bond Casters for use on many of its other pieces of shop equipment.

Bond Casters are made in a wide variety of styles and sizes to fit every industrial need. Send for the Bond catalog today and let it help you to select the right casters for your needs.

BOND FOUNDRY & MACHINE COMPANY, MANHEIM, PA.



#### TORQUE SCREW DRIVER



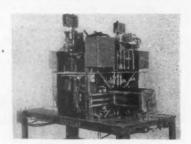
TORQUE Screw driver is announced by the Apco Mossberg Co., 136 Lamb St., Attleboro, Mass. Inch pounds are indicated directly on dial without the use of springs. The range is from zero to 25 inch pounds, adequate for at least 80% of all applications. Driver comes with two bits, one for Phillips screws and one for slotted screws, together with an adapter for a quarter inch square socket to take wrenches for small nuts, studs and socket screws.

### ANNOUNCE WATERPROOF PAPER SEALER

WATERPROOF paper sealer, approved for Method 1-A packaging, is announced by Carbozite Corp., First

National Bank Bldg., Pittsburgh, Pa. Impervious to water and not affected by fungi the sealer is listed as suitable material with most of the branches of the armed forces in the processing and packaging of water materials, according to the company. It can be used in conjunction with waterproof paper in sealing of seams, closures and joints in wooden boxes, as an adhesive for gluing waterproof paper liners to wood boxes or closed crates, sealing carton flaps and waterproof paper bags. It is easy to apply by brush, spray or dip method; dries fast; can be applied hot or cold.

### MULTIPLE SPOT WELDER



TYPICAL of the many war time developments which it is claimed may well reduce production costs is this dual hydromatic multiple spot welder built by Progressive Welder Co., 3050 E. Outer Drive, Detroit, Mich. Combining several operations in one, (there is duplicate welding station in back of the vertical panel), this dual welder built for assembly of ammunition boxes permitted output of some 220 containers per hour. Economy of equipment is secured by using only a single transformer for both welding stations and using standardized parts for various "guns." Container being fabricated in this view is a storage and shipping unit for 30 mm. ammunition.

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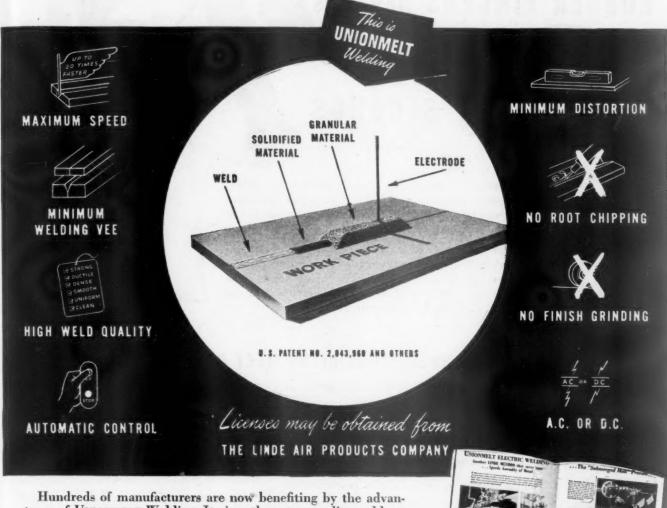
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# These are the advantages of Automatic UNIONMELT Electric Welding

A PROCESS OF WELDING ELECTRICALLY BENEATH A MINERAL MELT



Hundreds of manufacturers are now benefiting by the advantages of Unionmeta Welding. It gives them top quality welds at speeds that are greater than with any other similarly applicable process.

If your work includes the joining of carbon steel, of stainless, and other alloy steels, or of non-ferrous metals and alloys such as nickel, copper, Monel, and Everdur, it is quite likely that UNION-MELT Welding can speed production, raise quality, and lower your costs.

Anyone who wishes to use this patented invention may do so under our standard license agreement. License fees are low and are based upon extent of use. Complete engineering assistance is available to licensees.

For additional information send for the folder "Report No. 6 on the Use of Linde Methods in Mass Production"—or ask a Linde representative to help you determine where you can use the Unionmetr process advantageously.



MARITIME "M" AWARD
FOR OUTSTANDING
PRODUCTION ACHIEVEMENT

### THE LINDE AIR PRODUCTS COMPANY

Unit of Union Carbide and Carbon Corporation

30 E. 42nd St., New York 17, N. Y. The Offices in Other Principal Cities

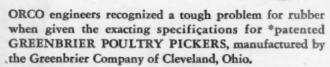
In Canada: Dominion Oxygen Company, Limited, Toronto

The word "Unionmelt" is a registered trade-mark of The Linde Air Products Company.

# ANOTHER APPLICATION OF ORCO-OPERATION

# RUBBER FINGERS like this Fick Foult IN 5 TO 20 SECONDS





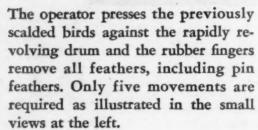
The machine illustrated is the smallest of four models, all identical in basic construction and operation but varying in size and in the number of flexible rubber fingers fixed firmly in the cylindrical drum which is mounted in the frame and revolved by an electric motor.



### ORCO RUBBER TECHNICIANS MEET COMPLEX REQUIREMENTS



Greenbrier Poultry Pickers make it possible to dress from 350 to more than 750 birds per hour, depending upon the size of machine used and the skill of the operator.



A specially compounded synthetic rubber was developed by ORCO technicians and engineered to meet the

complex requirements: The rubber fingers on Greenbrier Poultry Picking Machines resist sudden and frequent impact, frequency of extreme flexing, frictional heat and contact with oil from the poultry. Most important, the delicate poultry skin is fully protected from damage by scuffing, barking, or breaking throughout the cleaning operations.

Meeting difficult assignments in the fields of mechanical molded and extruded rubber and synthetic rubber, makes ORCO a fully qualified source for YOU.



### \* MEMORANDUM

Greenbrier Poultry Pickers, invented by George R. Hunt, Akron, Ohio, are manufactured exclusively by the Greenbrier Company of Cleveland, Ohio, and fully covered by U. S. Patent No. 2,300,157 and Canadian Patent No. 421,064.

BRANCHES: DETROIT . NEW YORK . CHICAGO INDIANAPOLIS . WASHINGTON . CLEVELAND

Hydraulic tensile strength

testing

Metallographic inspection

**Experimental laboratory** 

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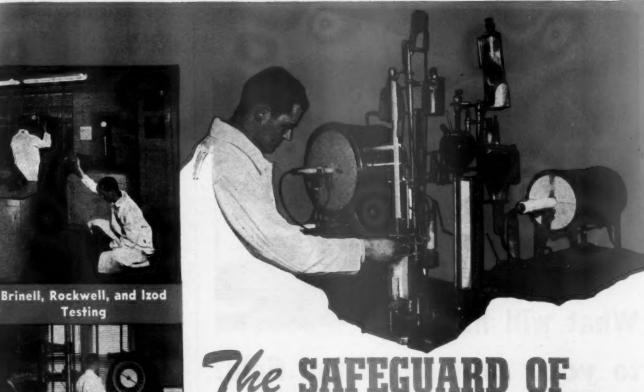
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The SAFEGUARD OF LABORATORY CONTROL

A modern operating laboratory exercises close control over all processes in the production of forgings which bear the Kropp trade mark. This facility is complete and equipped for making physical, chemical and metallurgical determinations of all kinds. Here, accurate analysis is made of pilot lots of thousands of tons of steel yearly. Acid etching, and heat treating facilities, Rockwell and Brinell hardness testers, hydraulic tension testing machines, impact testing machines, Magnaflux inspection, temperature measuring and control equipment, a chemical laboratory and a myriad of auxiliary equipment to assure quality and uniformity are available.

At Kropp Forge, test and inspection begin when the steel arrives from the mill. Inspection of forgings during processing includes laboratory study of problems dealing with dimensions, grain flow, heat treatment, and the elimination of defects. A number of vital determinations are made by the laboratory on test pieces before forgings are released by final inspection. Thus are the quality and uniformity in Kropp Forgings assured.

For flat die, drop or upset forgings, call your nearest Kropp engineering representative or write direct for immediate quotation.

KROPP FORGE COMPANY

5301 W. Roosevelt Road, Chicago 50, III.
Engineering Representatives In Principal Cities





# to your product in the field?

What will happen to your product in the field can depend upon what has happened to its precision parts in the factory where they were made.

Manufactured to meet your specifications, Corbin Precision Parts offer the refinements that come only with experience, skill and large facilities. Corbin has the Men, Materials and Machines to do each job the best way — to check and doublecheck — to keep ahead of your needs, and to change direction as required.



Facilities are explained in this bulletin — which you will find in Sweet's File 4110 for Product Designers. If you prefer that we send you a copy, please request it on your letterhead.

THE CORBIN SCREW CORPORATION

The American Hardware Corporation, Successor



Precision Parts

### SELF-LEVELING SLINGS

PICTURE shows
14-ton Safe-T-Lift
automatic - equalizing chain sling
carrying 13 ton
Diesel motor. Sling
is made by Hercules Sling Co.,
Rockford, Ill.
Slings are available in 4 ton, 7 ton,



14 ton, 25 ton and 40 ton capacities. When loads are lifted one chain leg becomes longer than the other and as the weight of the load pulls on the chain, sheave in equalizing unit pulls down against a brake, preventing slippage. Maker says perfectly level lifting of loads is assured. Printed matter available.

#### HANDLING DRY BULK MATERIALS



NEW motor-driven cab-operated double bucket carrier for the transportation of dry bulk materials has been developed by The Cleveland Tramrail Divn. of The Cleveland Crane & Engineering Co., Wickliffe, Ohio. Operation of carrier and opening and closing of bucket gates are handled by the operator. The unit illustrated has two 25 cu. ft. buckets and is designed for carrying total load of two tons. Carrier is provided with two motorized travel drives, one at each end, and operates at speeds up to 600 ft. per minute.

### PORTABLE BEAM SCALE

MODERNIZED portable beam scale designated as Model No. 54, capacity 1,000 lbs., is offered by the Howe Scale Co., Rutland, Vt. Graduations are die-cast on the lower edge of the



beam, standing out clearly against a dark red background. Possibility of error in reading is further minimized by a center-indicating poise with a non-removable set screw. Wheels are so designed that the ends of the axles are enclosed and do not project to tear clothing or bags. Four ball bearings set between platform and pivot bearings absorb brunt of platform movement. Platform is cast in one piece. The No. 54 is available with either a single beam graduated 100 x 1/2 lb., a double beam similarly graduated, or a full-capacity beam graduated 100 x  $\frac{1}{2}$ lb. on the upper bar and 100 to 1,000 pounds on lower bar.

(Continued on page 182)



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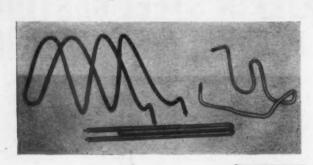
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# Bent (VULCAN) Tubular Heating Units

Furnished bent to special shapes for fitting around or clamping to vessels, tanks, pipes, etc.

Metal casings of various metals to suit application.

Write for catalogue showing specifications and list prices on standard sizes and types of all kinds of heating elements.

### **VULCAN ELECTRIC COMPANY**

DANVERS, MASS.

Makers of a wide variety of Heating Elements for assembly into manufacturer's own products and of Heating Specialties that use electricity.



#### COOLANT & CUTTING OIL STRAINER



NON-clogging coolant and cutting oil strainer for easy installation on grinders, lathes and other machine tools, known as Metex Model G, said to provide cleaner fluids and longer periods of uninterrupted strainer service, is announced by Strainer Products Corp., 75 N. Willow St., Mont-clair, N. J. It is constructed of knitted fabric and wire made into strong, noncollapsible rectangular units with unusually high strainage area. Composite honeycomb mesh is said to be fine enough to catch dirt, grit and chips yet provide ample free area for the passage of cleaned fluids. It is available in six sizes, surface straining areas and capacities. Literature available.

IMPROVED
METALCUTTING
ELECTRODE

IMPROVED type of cutting electrode permitting greatly increased speed in metal cutting and for use at unlim-

ited depths underwater, is released by the Ellwood Products, Corp., Ellwood City, Pa. It is known as the Ellpro electrode, and is made of steel in the form of a hollow tube with an adhesive type coating which prevents it from sticking to the cutting surface. It is used with oxygen. It may be used underwater or elsewhere with ac or de current. Special torch holder prevents electrode from burning down to a point where it cannot be removed with ease,

#### DRAGLINE-CLAMSHELL-CRANE AND BULLDOZER



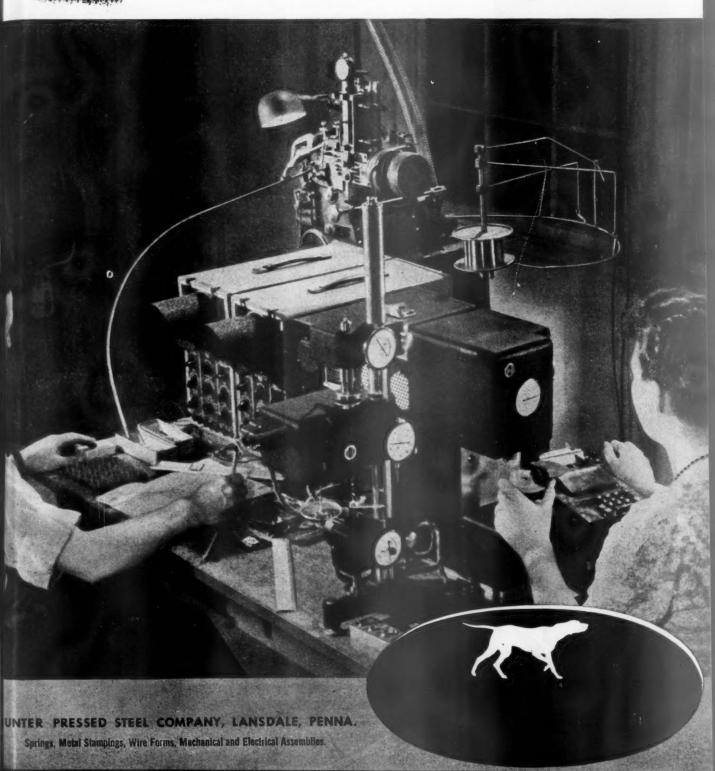
THE Hystaway, a combination dragline, clamshell and crane unit for tractor mounting, is announced by the Hyster Co., Portland, Ore., and Peoria, Ill. It permits a working combination of bull-dozer, dragline, clamshell and crane. Easily transported by dump trucks or flat-bed trucks the Hystaway can be taken from one job to another for tractor installation. Partial use of bulldozer can be made without removing Hystaway from rear; when full bulldozer production is desired (or other conventional uses) unit can be removed in less than an hour.

UNI

## Search Warrant for Spring Trouble

Spring coiling can, and often does, become a very complicated and vexing problem where both machine and material must yield peak performance in order to meet critical dimensional and test specifications,

Then ordinary methods of analyzing the product deviations and its many possible Causes are out. Only unusual technical skill supported by advancing instrumentation can succeed in obtaining the desired solution. All of the many special electronic devices used in regular production and for special investigations are designed and constructed by Hunter's Special Apparatus Division. If you agree we go to more trouble to make springs right than you expected of leading springmakers, we can only say-you haven't seen anything yet.



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# Where ENGINEERING

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• The effects of dynamic and eccentric loading of springs; rubbing contact; buckling; small but unavoidable variations in wire and spring diameters—these and many other factors are often sufficient to upset all theoretical calculations in spring design. Satisfactory performance and long life, therefore, depend to a large extent on a rare combination of spring engineering and ripe experience in diagnosing and prescribing the remedies for spring troubles.

Successful spring designing consists of producing the simplest and least expensive springs which will do the work satisfactorily. That's why the highly specialized engineering and practical experience of the "Cleveland" organization is doubly valuable to manufacturers when designing new equipment or instruments. This service is yours for the asking, without cost or obligation.



IASING

# IMPROVED LIGHTING

- INCREASES PRODUCTION
- 2 IMPROVES QUALITY
- 3 REDUCES SAFETY HAZARDS
- A REDUCES ERRORS

WANT to increase production and reduce costs? Hundreds of plants know from experience in war production that properly engineered G-E lighting can help increase productive efficiency and reduce production costs.

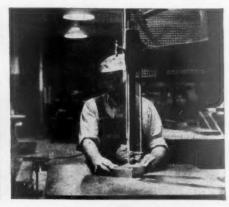
These same advantages will prove of equal value to the manufacturer faced with the rigorous competition of peacetime production. Here are a few typical advantages of modern, scientifically-designed General Electric lighting:



Increase Production: G-E Lamps provide daylight-quality illumination... increase the efficiency of machine operators enabling them to produce better and faster work.



2 Improve Quality: This plant gets improved precision and accuracy of work — thanks to smooth, glare-free lighting with G-E Fluorescent Lamps.



Reduce Safety Hazards: Accidents and injuries are reduced with properly designed lighting. For better, faster, safer seeing, G-E Lamps provide the answer.



4 Reduce Errors: General Electric Fluorescent Lamps, producing abundant light free from glare and shadow, help reduce eye fatigue and permit more work with fewer errors.



### WHAT'S YOUR PROBLEM?

TURN to G-E for assistance in its solution.

General Electric Lighting Engineers offer you all the resources and technical skill developed through more than 60 years of leadership in lamp research. Consult your G-E Lamp Supplier today.

G-E LAMPS
GENERAL & ELECTRIC





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#### CONTROLLED BATTERY OF SCALES **ELIMINATES HUMAN ELEMENT**

Illustrated is an application of automatic weighing and proportioning equipment used in a glass plant, where ten scales are electrically interlocked through a central control panel, furnished by Toledo Scale Co., Toledo, Ohio. An important feature of this installation is the way in which the human element is elimi-



Automatic batching begins with flip of switch.

nated, which can also be applied in solving the problems of other industries. The batching process begins with the flip of a switch, and the operator can watch the progress of the complete operation by observing the signal lights on the panel The principles which made this possible can also be successfully applied in mixing concrete, bread dough, cosmetics, as well as in proportioning problems.

This equipment is used for control of a single critical ingredient or complete control of several. Provision can be made for either rapid or dribble control, and material can be fed onto conveyor belts or into gathering cars. These principles, applied to particular problems, control the uniformity of the finished product, conserve materials, add speed to the operation and eliminate the human element. This equipment eliminates the chance of feeding too much or too little of an ingredient, or omitting an ingredient altogether.

This system can be easily installed under a variety of operating conditions as the scale levers are especially designed to support weigh hoppers, weigh tanks or other load containers which might be

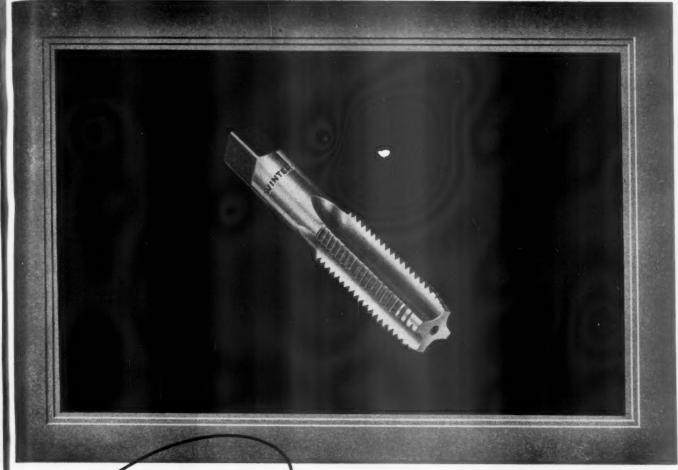
### 1 1 1 PLASTIC GLASS PANELS MADE OF

GLASS CLOTH AND MELAMINE RESIN A new plastic-glass panel for electri-cal control boards on Navy ships which cuts down danger to equipment and men

in case of fire is now being used on board U. S. fighting craft. The new material, called glass Melamine Micarta, is more resistant to shock than the previous types used, and it is far more fire-resistant than the equipment it replaces, because, when heated, it produces nitrogen, an inert gas that smothers flames.

"The new form of Micarta is made of glass cloth bound together with a resin

(Continued on page 188)



# DESCENDENT OF A FAMOUS LINE

You'll like WINTER High Speed TAPS. Like the thoroughbreds they are, they accept the toughest production assignments and come thru with flying colors. Put them on your most difficult—or fussiest jobs and watch them perform. Catalog mailed on request.

DIVISION OF NATIONAL TWIST DRILL & TOOL CO., ROCHESTER, MICH.



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PROTECTING electrical appliances since the toaster replaced the fork

Doing the unusual is daily routine to the electrical appliance industry. Unusual, too, are the requirements called for in the plating equipment that gives modern electrical conveniences gives modern electrical conveniences their long life and lasting eye-appeal. Finishes must resist or conduct current in varying degrees, must witherent in varying degrees, must withstand-severe thermal shock, and often take the beating of careless use. In developing such finishes, H-VW-M has worked closely with appliance manufacturers since the home toaster was a novelty.

Even the old toasting fork, which the streamlined "pop-up" has replaced, was plated with H-VW-M equipment. Today, we stand ready to work with all industries in the planning and layout of new planting and finishing departments, and to offer technical counsel on the operation and equipment of existing plants. Write us now to find how our century and a quarter background can be applied to your present or anticipated requirements.

HANSON-VAN WINKLE-MUNNING CO.

MATAWAN, NEW JERSEY

Manufacturers of a complete line of electroplating and polishing equipment and supplies. equipment and suppries.

Plants: Matawan, New Jersey - Anderson - Detroit - Eikhart

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Pittsburgh - Springfield (Mass.) - Syracuse



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**7499** 



THIS TAPE-SHOOTER IS EQUIPPED WITH THE PATENTED MOISTENING UNIT INVENTED BY BETTER PACKAGES, INC.

ecommended by American **Railroads and The Gummed** Industries Associations.

SHELTON, CONN

(Continued from page 186)

binder of the Melamine class, a cyanamid base synthetic," said H. C. Guhl, engineering manager of the Micarta Division of the Westinghouse Electric Corporation. "This resin binder was used for surfacing plastic panels made for re-frigerators before the war. When it is used as a binder with the glass cloth, an inorganic substance, the two together make a practically fire-proof material.

"In addition the continuous length of the fibers in the glass cloth gives the new material great strength against sudden blows or concussions that are likely to be experienced aboard a naval ves-

sel in time of war."

PLASTIC SPOOLS KEPT WITHIN .005 INCH TOLERANCE

An excellent example of how highfrequency electronic preheating (heatronic molding) speeds production and helps to improve quality in molded plastic parts is furnished by the tire cord twist spools molded by Standard Products Company and the Plastics Division of Continental Can Company for the Industrial Rayon Corporation.

The spool ends, molded from Bakelite phenolic high-impact molding material,



Production Rates Increased 15%

must be kept within tolerances of plus or minus .005 inch. This is necessary to simplify balancing and produce even winding. Through the use of the heatronic method, the spool ends are kept within the required tolerances and the production rate on these parts has risen 15 per cent.

Phenolic molding material was chosen not only for its impact strength, necessary because of high-speed operation and rough handling that the disks receive, but also because of its resistance to heat, abrasion, moisture, and electrical characteristics. The latter is particularly important, because the Industrial Rayon Corporation has developed a new process for setting the twist in rayon cording uniformly. The spools of rayon are passed through a high-frequency field, and the electronic action sets the twist uniformly.

The spool ends are 6 and 7%-inch disks, held together with a steel tube. Laminated tubing, made with Bakelite phenolic laminating varnishes, forms the waist of the spool. Though exposed to high temperatures, the spool ends heat up very slightly and therefore do not bluster. The rayon tire cord produced by this process is used in the manufacture of heavy-duty military tires.

The Simple Answer to **Tough Fastening Problems** 

# **B.F.Goodrich** RIVNU'

Use as blind rivet . . .

as nut-plate for attachment . . . or both at once

Rivnuts are one-piece blind rivets with real versatility. You can fasten with them, and fasten to them-or do both at once-all the while working entirely from one side! Rivnuts are strong, light, low in cost-and really simple to use.

Used as rivets, Rivnuts stand up well under severe single or double shear loads; resist being pulled through metal or plastic, even under conditions of eccentric load. For use as a nut-plate, Rivnuts are available with a key that provides high resistance to torque. No special preparation is needed before use. The Rivnuts' lateral expansion when headed makes them fit tight.

HEAD COUNTERBORE THREADS

Rivnuts are made in aluminum, brass and now STEEL! For high resistance to torque in wood, fiberboard or plastic, a Rivnut with a splined shank has been designed. In all types, a wide selection of sizes and grip-ranges is available. Or, if no standard Rivnut fits your particular needs, B. F. Goodrich engineers will be glad to work out special designs with you.

INSTALLATION OF RIVNUT IS EASY!

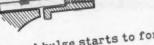
Rivnuts are upset with a heading tool (hand or hydraulic) that transmits a pull

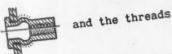
on the threaded portion



so that the counterbore







(which is thinner) has to give. A bulge starts to form

push the counterbored portion until the expanding metal seats itself firmly against If aluminum or brass Rivnuts will be sub-

the material being fastened



jected to torque, choose a Rivnut with



for increased resistance.

40-PAGE "RIVNUT DATA BOOK"

All the details of the interesting Rivnut story clear diagrams - test data - exact figures. For the facts about this fastener, get "Rivnut Data" now. Just write The B. F. Goodrich Com-pany, Department, PU-10, Akron, Ohio,

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# Output up 95%



DESIGN the MPM staff includes creative engineers experienced in industrial design



MOLD MAKING - completely equipped facilities for precision work

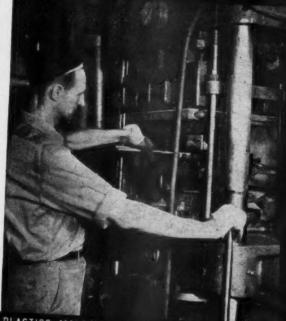
# YOU CAN PROFIT BY THIS DEMONSTRATED ABILITY

Make use of the proved resources of Minneapolis Plastic Molders to lower costs... to increase production... to find a better way to do the job. MPM facilities bring you the benefit of the knowledge of specialists, each experienced in his own line, for industrial design, mold and die-making, compression and transfer molding. Responsibility for handling all phases of the work is centered at one single source.

### IF YOU HAVEN'T USED PLASTICS

There is nothing about plastics in themselves. But it is amazing how often plastics can be used to cut costs, to step up quality and performance—factors that lead directly to important sales advantages.

Write for recommendations about how your molding problems can best be met — for suggestions about new uses for plastics in your business. No obligation.



PLASTICS MOLDING - skilled operators, power presses for compression and transfer molding



INSPECTION the final step. Every operation, from design to finished product, handled by MPM. Photo shows frangible bullet inspection

# -Waste cut 37%

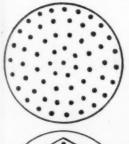


### THE FRANGIBLE BULLET

.... was developed by the Army Air Forces and the National Defense Research

Council for gunnery training. The bullets are used for actual combat practice and disintegrate when they strike the specially treated armor plate used on the training planes.

# A SIMPLE CHANGE WITH ASTONISHING RESULTS!



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ion

Shown at left is a diagram of the mold originally adopted. The lower diagram is the MPM concentrated pattern in mold design. Waste space cut to a minimum . . . production increased . . . materials saved.

# ESTABLISHED BY MINNEAPOLIS PLASTIC MOLDERS IN FRANGIBLE BULLET PRODUCTION . . .

When large scale production of frangible bullets commenced, original mold designs turned out 23 bullets from every pound of molding mixture. Over two thirds of the compound was left in the cull.

Convinced that much of this waste could be turned to increasing output of the urgently needed bullets, MPM designers took up the problem of improving the mold design. They found the answer—emphatically—in the ingenious hexagonal mold. Forty-five bullets, are now turned out in place of twenty-three. A gain of 95%! Savings in materials total approximately \$370,000 monthly.

The hexagonal mold represented a departure from established concepts. The cavities, for example, are ground internally instead of hobbed. There were some who declared the whole plan impractical. But MPM is organized to develop new methods. Complete mold making facilities equipped for precision work are combined with imaginative designers and practical molding experience. Responsibility for every assignment remains at one source. Minneapolis Plastic Molders contribution to the frangible bullet program is evidence of ability to deliver.



MINNEAPOLIS PLASTIC MOLDERS, Inc.

2310 EAST 31st STREET - MINNEAPOLIS 6, MINNESOTA

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pro



ROAD BUILDING calls for plenty of equipment. It must do rugged work efficiently, economically and safely. That's why you'll find so many engineers specify so many Acco products for construction jobs.

You'll see wire rope made by American Cable and Hazard supplying the muscle for shovels, scoops and other equipment. You'll notice hoists and cranes by Wright handling heavy materials. You'll find chain by the American Chain Division in service for pulling and lifting. You'll see electrodes by Page Steel and Wire in action at welding jobs.

These are only a few of the primary products made by the 15 divisions of ACCO-products vital in war, essential in peace: Chain • Wire Rope • Aircraft Cable • Fence • Welding Wire • Cutting Machines • Castings • Wire • Springs • Bolts & Nuts • Hardness Testers • Hoists & Cranes • Valves.



## FELT PRODUCTS ISSUES ENLARGED MATERIAL SAMPLE FOLDER

Just off the press is the new Fel-Pro Material Sample Folder #41-A, issued by Felt Products Mfg. Co. of Chicago, makers of industrial gaskets and packings.

This folder contains 52 actual samples of gasket and packing materials, an increase of 50% over the previous edition it replaces. It addition to the samples, there are descriptions of each material, recommendations for their use, and technical data as to thickness, finish, etc.



Felt Products Sample Folder.

Among materials shown are many treated in various ways—such as thiokolizing, coating, processing, laminating, vulcanizing, etc.—to meet special sealing conditions. Other Fel-Pro materials shown in the folder find increasing applications in the radio and electronic fields, and for sound and vibration dampening. In short, Felt Products Mfg. Co. claims materials for anything in the packing and gasket line from the tiniest washer to the largest Diesel Engine head gasket.

In common with other manufacturers faced by war-time scarcities, Felt Products has been obliged to develop synthetic substitutes. In many cases these substitutes have proven superior to the pre-war materials and are expected to find numerous post-war applications.

Copies of the new Fel-Pro material sample folder #41-A may be obtained by writing directly to the manufacturer.

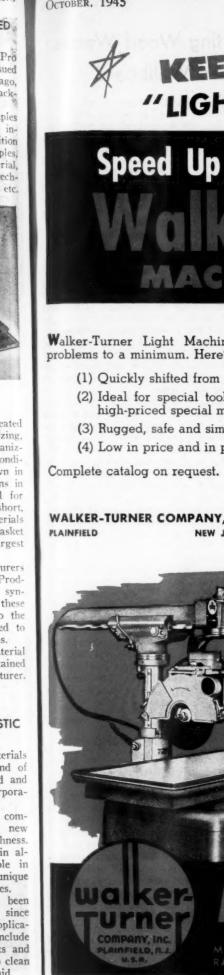
## "TOLEX" IS NEW TOUGH PLASTIC

One of the important new materials to come out of the proving ground of war is the new "Tolex" developed and manufactured by Textileather Corporation, Toledo, Ohio.

This new plastic leathercloth combines colorful smartness with a new conception of wear-resisting toughness. "Tolex" is possible and practical in almost every color—and is available in literally thousands of colors, and unique "Leatherstone" patterns and finishes.

The toughness of "Tolex" has been

The toughness of "Tolex" has been demonstrated month after month since Pearl Harbor in the many war applications for this material, which include upholstery for tanks, planes, trucks and naval warcraft. "Toltex" is easy to clean with a damp cloth or cleaning fluid.



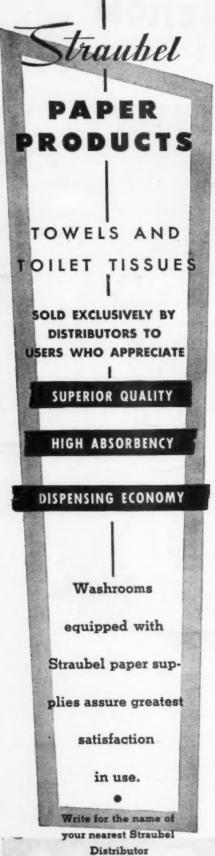
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# Straubel PAPER COMPANY GREEN BAY, WISCONSIN

# New Process For Converting Wood Wastes Into Fine Quality Hard Wallboard

Without the cutting of one additional tree, construction materials made from sawdust for 1,000,000 houses per year are now possible as the result of a new chemical process through which sawdust and other wood waste is converted into a fine quality hard wallboard.

Developed to reduce the tremendous loss which takes place each year in the cutting of wood, this revolutionary new process which provides a means of utilizing every part of a log is ready for quantity production, it was revealed in a joint announcement made by Dr. Donald F. Othmer, head of the Department of Chemical Engineering at the Polytechnic Institute of Brooklyn, and Warren R. Smith, research engineer of Crown Point, New York.

With the new process, the announcement said, 2,000 square feet of first quality strong, water resistant wallboards may be obtained from one ton of sawdust. It is estimated that approximately 20,000,000 tons of sawdust and related fine shavings and chips result annually from all phases of production by the lumber using industries in this country. Most of this is burned as waste. On the basis of 2,000 square feet to a ton this amount of sawdust could make 40,000,000,000 square feet of the new wallboard.

#### A Simple Process

According to the announcement, the process is so simple and the equipment costs so low, that every sawmill in the country with a production of a few tons of sawdust per day should now be able to realize profits on their sawdust waste. Plants using wood to manufacture furniture and other items also make chips and shavings of a large percentage of their lumber. This waste as well may be directly converted into hard board. For example, veneer stock may give less than 25 percent of the logs in the finished product with 75 percent of the log going into waste chips and sawdust.

Production of the new board is such an easy operation that it might be likened to the housewife's use of prepared cake and gingerbread batters which only require the addition of water and some stirring before baking.

The sawdust can be conveyed directly from the saw to a mixer where a chemical, which also comes from wood, is added. A minute or two for mixing is required and not more than ten minutes for making the board by squeezing the mixture in an hydraulic press. The whole operation is a matter of less than 15 minutes from the saw to the sawdust and to the finished board.

The simple chemicals which make the process possible cost less than one tenth of a cent per square foot and are themselves a waste by-product of wood utilizing industries. The catalytic action of these wood-derived chemicals causes the wood to recombine with itself in a strong grainless board having many advantages over new wood itself.

What makes the process adaptable to any small sawmill is the fact that the operation can be carried out without the necessity of having skilled technical help or chemists.

#### Can Also Be Molded

The hardboard made from sawdust opens up many new possibilities in the use of wood. Just as ordinary building wood, it may be nailed or otherwise attached to wood boards. It is resistant to termites, rot, moisture, warping, swell-and shrinking. Where the sawdust board takes on new characteristics is that it may be molded like a plastic into any special shape required-into complete doors, panels, or moldings. The entire door or kitchen panel with trim can be pressed out in one operation with no carpentry work required for joining. Special designs and shapes will be as easy to produce as the flower and heart shapes the caterer turns out in molding ice cream for parties.

To illustrate the unlimited possibilities of the material, Dr. Othmer said that one manufacturer is interested in using it for making compressed plates, cups, saucers and platters suitable for camping; and a builder of dories and duck boats is interested in using it to make this type of craft by pressing out an entire boat in one piece. Since the board can be molded in almost any desired size and thickness other manufacturers are interested in its use in built up sections for prefabricated walls, ceilings, floors, and roofs for factory built houses.

Besides sawdust, these boards may be made from other wood waste, such as chips, shavings, and the waste material from sugar cane called "bagasse". For woodless countries like some of the islands in the tropics, where there is no lumber but tremendous amounts of sugar cane husks wasted each year, the new process for the first time would permit the local manufacture of housing materials constructed almost entirely out of sugar cane husks.

### 7 7 7 FILM ON HONING

"Progressive Honing-With Automatic Sizing", is the title of a new sound motion picture, produced by The Jam Handy Organization, Detroit, for Micromatic Hone Corp., Detroit. This informational film is being shown by Micromatic Corp. sales engineers without charge, to industrial groups and industrial personnel having metal finishing problems and machine tool problems. It is to acquaint manufacturers with developments in the (surface processing) of metals in war time, and shows the construction and operation of the new tool, operation of microsize and hydrosize control, and application to mass production methods. For details address The Micromatic Hone Corp., 8100 Schoolcraft Ave., Detroit, Mich.



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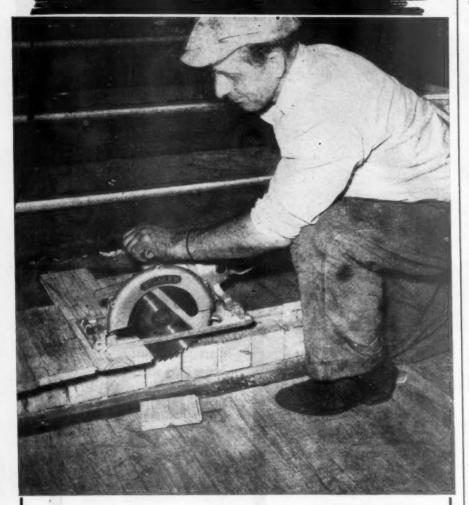
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# A hurry-up TOOL



## for maintenance jobs

The Stanley W9 Safety Saw sinks its teeth into such maintenance jobs as floor and stair repairing and platform rebuilding and betters your best expectations. Handles like a hand saw but much faster. With its  $3\frac{1}{4}$ " cutting capacity and tilting base for bevel cuts up to  $45^\circ$  in  $2\frac{1}{4}$ " material, this Stanley Saw may be the very manpower your maintenance crew is missing.

May be equipped with special blades for a wide variety of jobs and materials. Stationary and swinging guards keep cutting edge covered at all times. Just one adjustment for different depths of cut. Write for folder. Stanley Electric

Tools, Division of The Stanley Works, New Britain, Connecticut.



STANLEY

STANLEY SAFETY SAWS

#### INEXPENSIVE SAFETY LIGHT

Illustration shows small lamp known as Nite-T-Lite developed by Littlefuse, Inc., Chicago, for illuminating "danger" points, and indicating the location of



Costs less than cent a month

lamps or electric light buttons. It fits into the wall plug or any electrical outlet and casts a subdued, rosy glow. Lamp has uses in storerooms, halls, and other places where full lighting is not maintained steadily. Lamp is said to have exceptional long life, and can be operated continuously for less than a cent a month.

## TWO-WAY RADIOTELEPHONE FOR TRUCKING TRAFFIC CONTROL

A forerunner of general two-way radiotelephone, traffic control, dispatching and routing of some five million highway motor freighters has been successfully demonstrated by the Galvin Mfg. Corporation and Standard Freight Lines, Inc., of Chicago, in recent tests conducted with standard FM, 30-40 MC equipment.

The initial Motorola-Galvin tests have shown that two-way truck to fixed sta-



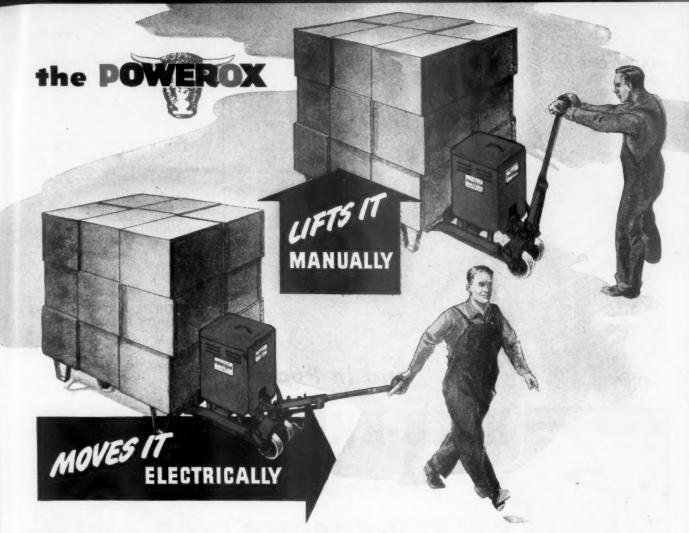
Upper insert shows driver using transmitter. Reception is through loudspeaker in roof. Lower insert shows complete equipment which is bolted to flooring.

tion radiotelephone communications can be maintained over a distance of approximately 50 miles, while signals from the fixed station to the truck can be heard up to 80 miles.

At the present time, the F.C.C. has not finally assigned any specific frequencies for highway truck radio, but the proposed allocations include four mobile highway truck channels in the 30-40 MC region, and four channels for fixed station operation in the 42-44 region. Urban trucking will probably be in 152-162 MC section of the bands.

The Motorola-Galvin FM, two-way radiotelephone is simple to install. The controls are on a control panel located on the dashboard, and consist solely of a squelch and volume control. The microphone is plugged into the control panel and red and green pilot lights indicate

(Continued on page 198)



## without a big investment!

No longer must the man with limited handling needs choose between wasteful hand methods and costly, heavy-duty power trucks. Now the Barrett PowerOx fills the gap with a moderately priced, hand-electric combination capable of lifting and moving any load up to 4,000 lbs.!

A few strokes of the handle, and the load is raised. Push a button and it moves forward-effortlessly-propelled by the strong electric drive. Push another and it

Equipment

goes into reverse . . . with the handle in any position. The PowerOx makes it easy for one man, or woman, to outwork 3 or 4!

See what this saving in manpower can do for you . . . how it can speed the flow of materials, and cut your handling costs to the bone! A Barrett engineer will be glad to demonstrate.

BARRETT-CRAVENS COMPANY

3280 West 30th Street Chicago 23, Illinois

Representatives in All Principal Cities Canadian Licensee: S. A. Armstrong, Ltd. . Toronto, Ontario



Like to make every move count? The Barrett Junior Catalog shows you how. It's free!





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and in Peace!

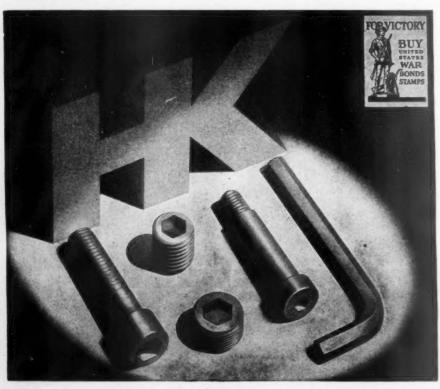


# HOLO-KROME

fibro forged

## SOCKET SCREWS

THE BETTER FASTENING METHOD



THE HOLO-KROME SCREW CORP. HARTFORD 10: CONN U.S.

(Continued from page 196)

whether the unit is in transmitting or receiving position.

The entire mobile unit is housed in two cabinets which can be bolted to the floor. The truck's storage battery furnishes the power to run both transmitter and receiver; while operation of the unit is comparatively easy and can be mastered by inexperienced personnel. The antenna is base-hinged to permit its passing under bridges and viaducts without breaking.

Present plans call for the establishment of about 100,000 mobile truck radio units and 1,000 fixed or land stations within a very short period.

#### SYNTHETIC ALIGNING RINGS OUTLIVE RUBBER 20 TO 1

Laminated washers cut from sheets of compar—a vinyl resin derivative developed by Resistoflex Corporation, Belleville, N. J.—are now being used by a large radio manufacturer as aligning



The rings are die cut.

rings for the assembly of metal tube bases. According to the manufacturer's maintenance records, the compar rings wear 20 times longer than the previously used molded gum rubber rings—a replacement for which was sought when rubber was allocated only to most essential military uses. The rings, which are exposed to constant abrasion during assembly, are die cut from the sheet stock which Resistoflex formulates to specified durometer hardness and resiliency.

## AIRPLANE OUTPUT PLACED AT 9000 PER YEAR

Aircraft manufacturing in peacetime will be a relatively small industry compared with its wartime vastness, requiring probably no more than 200,000 workers instead of the 1,000,000-odd employed during the peak of war production, according to E. E. Wilson, president of the Aircraft Industries Association and vice-chairman of the United Aircraft Corp.

Aircraft production likewise will decrease sharply, Mr. Wilson said, estimating the peacetime output at about 9,000 per year, including fighting and pleasure planes. Moreover, he said, of the estimated 200,000 workers needed, some 50,000 will be highly skilled engineers.

NOST TALKED of CATALOG IN WES

HIGH SPEED GRINDING

OFFERED Free



Electro-GRINDING WHEELS

to

EXECUTIVES, PURCHASING AGENTS

Superintendents and Foremen interested in the use of cut-off and other High Speed Grinding Wheels. More than a catalog. It is the latest handbook of grinding tools and techniques. 64 pages illustrated in full color.

Please use your company letterhead when requesting your free copy of "Electro" Catalog 645.
(See next page.)

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Electro- REFRACTORIES & ALLOYS CORPORATION

Mfrs. of Grinding Wheels, Refractories, Crucibles, Alloys and Stoppers

SEE NEXT PAGE

4-Color Illustration
From Page 30 of "Electro's"
New Handbook Catalog 645





**Machine Operators** 

In Catalog 645, "Electro" uses full color and authoritative text to present to Industry, newest grinding wheels and techniques developed during these five years of unprecedented progress in speed and precision. It is the very latest grinding manual.

### WHEEL TRUTH

Electro CUT-OFF Wheels in all sizes are becoming standard throughout industry because "Wheel Truth" assures straight, narrow, clean cuts, quickly.

- 1. MAXIMUM UNIFORMITY results from our precision processing of abrasives and new bonding which eliminates spots of varying density and hardness.
- 2. LONG LIFE results from uniformity, balance and minimum removal of material because of narrow cut.
- **3. CUTTING SPEED** results from narrow cutting by special processed grits to increase man-hour production.

### WHEEL BALANCE

This general acceptance of Electro CUT-OFF WHEELS is intensified and speeded by "Wheel Balance" which minimizes vibration and reduces breakage.

- 4. COOL CUTTING results from minimized vibration to reduce side friction.
- **5. CLEAN CUTTING** results from holding Electro Wheels to rigid tolerances and resulting finish often suffices.
- **6. SAFE CUTTING** results from extraordinary structural strength, minimized vibration and freedom from binding.
- 7. **ECONOMICAL CUTTING** results from high speed, precision removal of a material minimum and great reduction in wheel breakage.

These individualities of Electro CUT-OFF WHEELS explain the exceptional satisfaction they assure in:

STEEL MILLS to cut Low Carbon, Cold Rolled and Stainless Steels • TOOL ROOMS to cut High-Speed and Hardened Steels, Drills and Stellite • NON-FERROUS FOUNDRIES to cut Bronzes, Brasses, Aluminum, Copper and Monel Metal • FERROUS FOUNDRIES to cut Steel Castings and Cast Iron • CERAMIC PLANTS to cut Porcelain, Refractory Material, Tile and Other Non-metallic materials.

SEND FOR NEW CATALOG-HANDBOOK No. 645

Electro-REFRACTORIES & ALLOYS CORP

344 DELAWARE AVENUE

WEST COAST WAREHOUSE Los Angeles, Calif.

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# PRODUCT IDENTIFICATION

with

### PAISLEY LABELING ADHESIVES

Paisley supplies Adhesives for attaching paper labels to any and all kinds of containers and packages. They range from brushable Pastes to the highest speed Glues for fast automatic machines. We can adhere labels to wet, greasy, hot or cold containers.. ice-proof and water resistant types for beverage and food containers subjected to refrigeration or water immersion. Label Pastes and Cements that stick to varnished, inked or lacquered surfaces.. to plastics and foil. YOUR labeling job can be handled by a PAISLEY ADHESIVE.



# PRODUCT PROTECTION

with

### PAISLEY PACKAGING ADHESIVES

The experience that PAISLEY has gained in supplying waterproof and special adhesives for rigid Army and Navy packaging and fabricating specifications has enabled us to produce civilian packaging adhesives with new high standards of quality and performance.

No one adhesive group can honestly be the answer to all packaging adhesive operations. For this reason, PAISLEY works with all adhesive raw materials, such as:

Starch Bases...Dextrines, Flours (Tapioca, Corn, Potato)

Animal Bases...Hide, Bone, Gelatine, Fish. Protein Bases...Casein, (Prepared liquids).

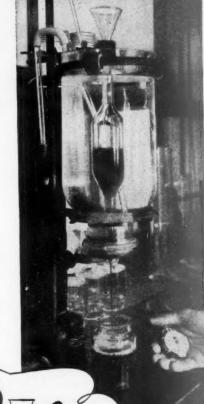
Resin Bases....All types of synthetics (emulsions and solutions) and hot melt thermoplastic coatings, laminants.

Rubber Bases...Synthetic rubbers, reclaimed rubbers, latex. Asphalt Bases..Emulsions, specially compounded.

Wax Bases....Resin-wax specialties, sealing compounds.

Gum Bases.....Natural and Synthetic,

Thousands of adhesive formulae have been compounded from these main adhesive bases, each one having special qualities that suit it to a specific packaging, labeling or sealing operation. They must be intelligently selected with full knowledge of their limitations as well as their many virtues. For this reason PAISLEY SCIENTIFIC Adhesive Service was formed to assist the packaging adhesive user in obtaining the one best, correct adhesive to meet the individual operation under study.





PAISLEY PRODUCTS INCORPORATED

Manufacturers of Glues, Pastes, Resin Adhesives, Cements, and Related Chemical Products

1770 CANALPORT AVE., CHICAGO 16, ILL. \* 630 W. 51st STREET, NEW YORK 19, N. Y.

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# requirements for SPECIAL WASHERS & SMALL STAMPINGS

When you need Special Washers or Small Stampings send us your blueprints or specifications. If one of our 10,000 sets of tools won't give you what you want, we will place our expert Tool & Die Department at your disposal.

We are specialists in designing and producing Special Washers and Small Stampings from steel, brass, copper and other metals. Our quarter-century of experience is your assurance of careful attention to every detail.

Also a full line of Standard Washers—U.S.S., S.A.E., Burrs, Etc. — in kegs or cartons.

THE MASTER PRODUCTS CO.

## MACHINE FOR TESTING CORDS BY VIBRATION

Fatigue testing by vibration, of cords for tires, belting and a long list of products in which fabrics play a leading role, as well as filaments for other purposes, is accomplished by a new cord tension vibrator developed by The B. F. Goodrich Company, tire and rubber manu-



facturers. The apparatus is being manufactured and sold, under license, by the Ferry Machine Company, Kent, Ohio.

The cord tension vibrator makes it possible to supplement information on tensile strength with new data on the ability of the cord or fabric to withstand repeated small stresses far below the tensile strength of the material. This has been designated by the broad term "fatigue resistance."

Fatigue resistance of cords is especially important in tires because the normal life of a tire casing usually ends when any cords rupture, the breakage of a few being rapidly followed by failure of remaining cords in the same zone.

## 1 1 1 POWER-BRUSHING THREADED STUDS

Here is shop-born idea for stepping up production in power-brushing threaded studs reported by Osborn Mfg. Co. of Cleveland. This holding fixture employs the "gas pipe" idea, which is both novel and scientific. The pipe is placed at a



Ho'ding fixture employs "gas-pipe" idea.

level which enables it to employ gravity as an aid in the feeding. Opposing the gravity is a small side brush which extends through the pipe brushing wheel. When the threaded stud reaches this opening and comes in contact with the power brush, it also engages the small side brush. Since the power brush rotates the threaded part, it follows the course of the threads from one end to the other and controls the time the part is in con-

tact with the brushing surface.

If the part being brushed is made of soft material, the pipe could be of plastic or other compositon. This would avoid damage to the external threads as they pass through.

#### MACHINE REPAIR PARTS PROTECTED BY PLASTIC SKIN

Use of plastic "soup" or dip that gives small machine parts the same protection that banana or orange skins give fruit, has licked a heretofore stubborn corrosion and rust problem, and has resulted in receipt of the parts in first class condition in remote areas overseas.

Actual mechanics of the operation are simple. The parts may be tied by a length of Fiberglas cord to a conveyor chain which carries them through the plastic dip. Or they may be dipped singly, by hand. The dip, when cooled, forms a tough, transparent, one-tenth-of-an-inch-thick, flexible skin that can be peeled off when the part is to be used. The cord is cut off as close to the part's protective skin as possible.

Glass cord is employed because, if ordi-



The banana-like skin is easily peeled off.

nary cotton or linen cord were used, moisture absorbed by the short length of cord that remains imbedded in the plastic skin would be carried to the part, causing it to rust or corrode. Fiberglas cord has minimum moisture pickup. It is estimated that the new process can result in a cut or from 62 to 90 per cent in packaging time. Large quantities of paper and cushioning materials can be saved.

The dip is known as Eronel Thermodip, supplied for this use by Dade Brothers, Inc., Mineola, New York, and Los Angeles, California. Fiberglas cord is supplied by Owens-Corning Fiberglas Corporation, Toledo, Ohio.

## "CAREERS FOR CELLULOSE" INDUSTRIAL PLASTICS FILM

"Careers for Cellulose" is the title of industrial film available from Hercules' Cellulose Products Department, Wilmington, Del., which traces the manufacture of cellulose plastics from the cotton field to the finished plastic article. It shows cotton being transformed into cellulose and other bases for plastics, lacquers, film, rayon and other articles at Hercules chemical plants, testing of the cellulose materials, and actual manufacture of plastics.

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MAKES IT POSSIBLE FOR YOU TO GET ANY

**ELECTRONIC TUBE YOU NEED** 

FROM ONE LOCAL SOURCE

A Westinghouse tube representative will survey your electronic equipment to determine the number and type of each tube, regardless of make, and its estimated life.

Westinghouse tube representatives also will make tube surveys of the other plants in your area to determine the quantity, number and type of tubes required.

Your Westinghouse tube distributor then has an accurate picture of tube requirements of your entire area on which he may base his tube stock. This stock will include all the tubes which your equipment requires, regardless of make.

HERE'S WHAT YOU GET! A copy of the survey of your equipment. A report on the tubes used in your plant. Prompt delivery on these tubes from your local Westinghouse tube warehouse.

FOR A SURVEY OF YOUR PLANT . . . call your local Westinghouse representative or write Westinghouse Electric Corporation, Lamp Division, Bloomfield, New Jersey.

TUNE IN: John Charles Thomas-Sunday, 2:30 P. M., EWT-NBC. Ted Malone, Mon. through Fri., 11:45 A.M., EWT-ABC.

One call does it all

WHEN YOU USE THE WESTINGHOUSE

SURVEY AND SUPPLY PLAN!

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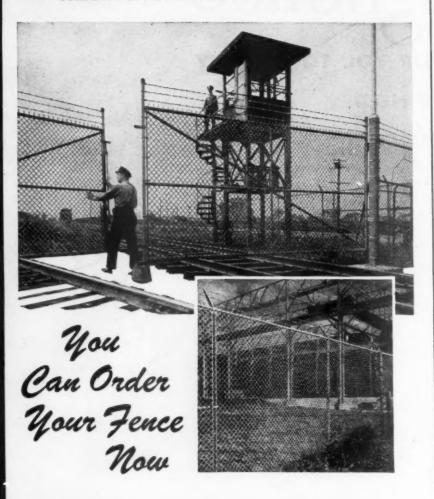
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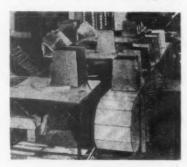
· AMERICA'S FIRST WIRE FENCE



● Because of the importance of property protection, war restrictions on chain link fence are among the first to be lifted. Many will want the fence that was denied them, as they have wanted other things long scarce or unobtainable except on highest priorities. It will take months to catch up with demand. Therefore, it is advisable to place your order NOW for long-lasting Page Fence. The Page Fence Association member nearest you will submit cost estimates and book your order. If you do not know his name, write or wire to the Association office in Atlanta, Bridgeport, Chicago, Denver, Los Angeles, Philadelphia, Pittsburgh, New York, San Francisco, or Monessen, Penn.

#### NEW TYPE ALL-STEEL CONVEYOR

Illustrations show all-steel conveyor belt, named the "Steelok" conveyor belt, developed by the Steel Parts Mfg. Corp., division of the Blackstone Mfg. Co., Chicago, Ill. The belt itself is made up of a series of steel plates linked together at



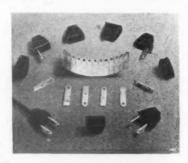
Conveyor being used as assembly line.

the ends. Plates are easily replaced. The belt is driven by a simple drive-sprocket that meshes with the hinges of the belt. The manufacturer states that the new belt is both efficient and economical in handling anything from cream-puffs to drop forgings. There is no sag at any point along the belt length and no open spaces between links so that a perfectly flat working surface is presented at every point. Operation is said to be virtually noiseless. Drive sprocket and motor are enclosed. Edges of belt are provided with a guard rail.

Conveyors are engineered for the specific job they are to do. Belts are available in varying widths and lengths according to requirements.

## DESIGN ELIMINATES NEED FOR SCREWS OR SOLDER

A new twist to an old item is provided in these plugs recently put into production by the Gilbert Manufacturing Co., Inc. The ingenious construction of the



Design of plug obviates need for screws or solder.

plug eliminates the need for screws or solder. The wire and its insulation are securely wedged in place by the prongs themselves, and the wire may easily be replaced without the use of tools. The prongs are merely slipped out of their sockets with the aid of any pointed object such as a paper clip, the new wire ends inserted, and the prongs shapped back into place. The plug is molded of a Durez phenolic molding material, providing self-insulation and a permanent, glossy finish.

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The Parker Triple Type Fitting proved itself so efficient and economical that its principle was standardized for Army-Navy use on aircraft and ordnance.

The flared joint of this fitting provides maximum "tightness" without strain or tension on the tubing itself. It is fully protected against leakage under pressure, and is safe in conditions of extreme shock and vibration.

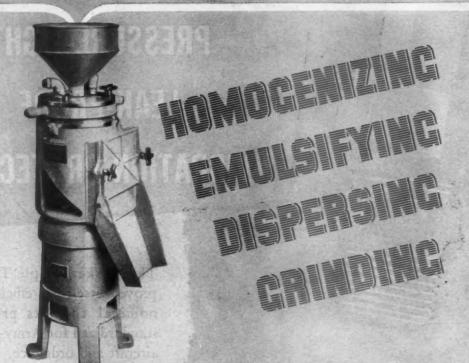
Parker systems provide streamlined flow, free from obstructions, and are easy to install and service, even in hard-to-get-at spots.

Production released by reduced military needs now permits you to use Parker fittings, in a wide variety of types, sizes and capacities, for power and fluid transmission systems.

Immediate deliveries from Parker warehouses, or from your mill supply house. Information gladly furnished by Parker Appliance Co., 17325 Euclid Ave., Cleveland 12, Ohio.



## BEGINNING OF THE END of high costs



Processing in a "PREMIER" Colloid Mill Increases Production Economy and Efficiency Improves Product Quality... Free Tests Made

The first step towards lowering processing costs has often been the use of a Premier Colloid Mill. Whether the materials to be improved are liquids, pastes or solids — performance establishes the economy of a Premier in emulsifying, dispersing and disintegrating.

A Premier Mill is a starting point for product improvement. Its intense shearing action affords thoroughness and uniformity in ingredient mixing, continuous homogenizing and fine grinding.

In many fields, purchasing agents recommend Premiers as having proved their value in actual service. Typical fields include adhesives, sealing compounds; asphalt emulsions; ceramic colors; coating and waterproofing emulsions; cosmetics; foods and beverages; oil emulsions; inks; leather finishes; latex — synthetic and natural; lacquer emulsions; lubricating oils, greases; pigment dispersions; organic chemical dispersions; paints, lacquers, varnishes; paper coatings, fillers, waterproofing; pharmaceuticals; plastics, resins; polishes, waxes; rub-

ber compounds; textile finishes. (Special laboratory models are available for research work.)

You can get a "Premier Preview", a free actualperformance test in our laboratories. Just ship your materials to us for a first-hand answer to "What can colloid mill processing do for me?" Premier Mill Corporation, Factory and Laboratory, Geneva, N. Y., General Sales Offices, 110 East 42nd St., New York 17, N. Y.

Descriptive Literature on Request



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# CAMOUFLAGE IS GOOD ...

but not for your nameplates

Call attention to your nameplates (trademarks, company name, instructions for product usage) — get that extra sales lift that goes with excellent product identification - all through the eye-catching appearance of Palm Brothers Slide-Off Decals.

You'll marvel at their simplicity of application — you'll be amazed by their low cost.

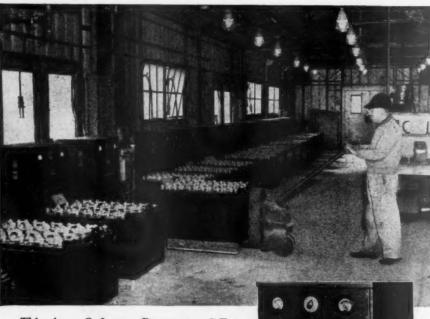
There's a decorative Palm Brothers Decal for almost every known surface — with proved properties to give you the utmost in satisfaction even under the most unreasonable of performance requirements.



Write today for your free copy of new

Bulletin No. 916.

OCT



This Army Ordnance Depot uses G-E automatic chargers to speed handling of ammunition for our armed forces.

## **AUTOMATIC CHARGING** OF ELECTRIC TRUCK **BATTERIES** PAYS BIG DIVIDENDS

G-E Automatic Copper-oxide Battery Chargers are designed to meet the exacting charging requirements of large industrial electric truck batteries as well as the smaller requirements of bat teries used in motorized hand trucks. Located in central charging stations or in truck working areas these trouble-free chargers offer astounding savings in POWER . . . TIME . . . LABOR.

HERE'S WHY

COMPLETELY AUTOMATIC-The truck operator merely sets a simple control and the charger "takes It delivers the charge then shuts itself off.

LOW INITIAL COST—Initial cost is low and quickly amortized by reduced power bills, maintenance and labor costs.

REDUCED POWER COST-G-E Copperoxide Chargers operate at 70 per cent efficiency at full load, only slightly less at one-half load.

NEGLIGIBLE MAINTENANCE—The only moving part is the fan which needs lubrication once a year. Removal of dust from the copper-oxide stacks is the only other maintenance required.

HIGHLY FLEXIBLE-No costly special foundation, base or other installation equipment is needed. Chargers can be easily moved from place to place.

OCCUPY LITTLE SPACE-The G-E automatic charger occupies approximately three square feet of floor space and can be fitted into convenient unused spots.

NOON-HOUR BOOST-Installed truck working areas the charger will give a "noon-hour" boost to batteries.

For further information, write to Section A1053-77, Appliance and Merchandise Department, General Electric Co., Bridgeport, Conn. Ask for the new truck charger bulletin-Publication No. 52-46.

**Keep Buying Bonds** —and Keep All You Buy



#### MOTORIZED TRUCK HANDLES TWO-TON LOADS

Illustration shows motorized loadcarrying truck specially designed and built to carry heavy motors and generators, by Walter C. Stuebing Jr. of Lift Trucks, Inc., Cincinnati, Ohio. It is not a lift truck—the bed is stationery. Heavy loads are placed on the truck by hand,



Safety Capacity 4,000 pounds.

erane, or otherwise. Safety rated capacity is 4,000 pounds. Finger tip control provides easy starting and stopping. It consists of two buttons on the handle, one for forward motion and one for reverse. Truck has dynamic brake control. Speed when empty is 312 feet per minute, and 220 feet per minute when loaded. Source of power is heavy duty batteries. Drive is 12 volt enclosed continuous rating series motor with 14.5 to 1 reduction which gives high starting torque without excessive heating. Batteries can be charged on regular equipment.

#### 1 1 1 ALUMINUM ROOF OVER CAST HOUSE

The shining aluminum roof shown below was installed recently over the cast house at Reynolds Metals Company Plant #1, 2827 Hale Avenue, Louisville,



Aluminum roof withstands corrosion.

Ky. Tests have shown that the aluminum roof will wear well under toughest con-

The 22 gauge galvanized iron roofing material, formerly used, had to be replaced at intervals of approximately eight months, due to corrosion caused by the cast house fumes in the building. Before this aluminum roof was put on, test panels of aluminum were exposed to the cast house conditions for more than a year, showing no appreciable effects from corrosion.

The material used in the aluminum roof, (24S-T Pure Clad alloy .032 gauge sheet) was made available from current surplus sheet stocks.

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# WHITE Ceilings and Walls

VICTOR'S CHOICE FOR "EASY SEEING AND ACCURATE WORKMANSHIP" ADDING MACHINE CO.

VELCEMONE REVISIONE SOLO

AUGUST 13, 1945

AUGUST 13, 1945

AUGUST 13, 1945

AUGUST 13, 1945

U. S. Gutta Percha Paint Company
Providence, Rinds Island

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Being engaged in a highly specialized kind of a company providence, Rinds Island

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When Victor Adding Machine Company converted to war work, a plant engineering department was created to raise plant facilities to utmost efficiency. Under their Plant Engineer, this department surveyed all factors bearing on production, including a survey of lighting for easier seeing and accurate workmanship.

It was natural that the services of professional lighting engineers were engaged to make this lighting survey. Natural, too, that to back up their new lighting system and distribute the light evenly throughout the working area all ceilings and walls were given a fresh coat of WHITE paint. We are very proud of the above letter in which Mr. Bartlett expresses Victor's satisfaction with the serviceability and high reflectivity of BARRELED SUNLIGHT whites.

No matter what type of lighting you employ, your lighting engineer will tell you that WHITE ceilings and walls will help you get the most out of it in creat-

ing good seeing conditions. For further data on the importance of light and paint to plant efficiency, send for a free copy of "Color for Industry" TODAY.



DATE

U. S. GUTTA PERCHA PAINT CO. 18-J Dudley St., Providence, R. I.

Please send us, without charge or obligation, a copy of your 16 page illustrated booklet entitled "Color for Industry."

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BARRELED

SPECIALISTS FOR NEARLY FIFTY YEARS



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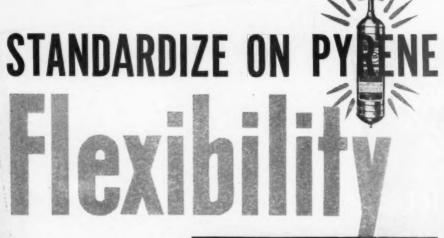
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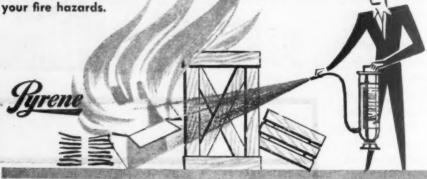
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in fire protection to

## meet each hazard and risk

Too many small fires have ended disastrously because the proper extinguishing methods were not selected to protect each specific hazard. This cannot happen if your fire equipment is flexible and the proper extinguishers are ready and available to meet different fire risks. Control of fire in all of its phases has been Pyrene's business for almost 40 years. There are specific Pyrene extinguishers to kill every class of fire. Standardize with Pyrene for complete protection. Ask a Pyrene Jobber to help you determine



For class "A" fires (fires in ordinary combustible materials—wood, textiles, rubbish, etc.) that frequently occur in warehouses, lumber yards, about farms, in homes, storage spaces or around docks, a Pyrene soda-acid, foam, water or anti-freeze type of extinguisher is recommended, and approved where cooling and quenching effect is of first importance.

BY THE WAY: WHEN DID YOU LAST TEST THE EXTINGUISHERS IN YOUR HOME?

Pyrene Manufacturing Company
NEWARK 8, NEW JERSEY
AFFILIATED WITH THE C-O-TWO FIRE EQUIPMENT CO.

TAPE AND BOXBOARD SAVER

By applying engineering techniques in the shipping room, engineers at the Lamp Division of the Westinghouse Electric Corporation, Fairmont, W. Va., have developed a sturdier new fluorescent lamp carton which will save more than



1,500,000 feet of sealing tape and 2,500,000 square feet of boxboard during the coming year.

The new container opens at the ends instead of at the sides. This makes possible the saving of boxboard equivalent in area to two entire sides of the carton because the overlapping flaps extending the length of the old carton are eliminated.

In the upper picture one of the new cartons is being sealed at the end, an operation that requires 54 per cent less tape than is being used to seal the old carton in the lower photo.

## MAKE PICKER STICKS OF PREGWOOD

Application of Pregwood, laminated plastic product of the Formica Insulation Co., Cincinnati, Ohio, is announced by the E. H. Jacobs Manufacturing Corp., Charlotte, N. C. The Pregwood



Pregwood picker stick after 16 months three-shifts-a-day service outwore 16 hickory picker sticks.

picker sticks in actual services are said to have several times the life of hickory sticks—twelve times more in some instances. While the laminated plastic costs more than hickory, the use of the pregwood pickers is said to have provided more economical operation. In one mill test, Pregwood stick on a Crompton & Knowles C-4 54-inch loom, operating at a rate of 152 picks a minute was used for 16 months continuous operation of three shifts a day and outwore 16 hickory picket sticks, it is reported.

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LOOK
FOR THIS
TRADEMARK!

When you buy bearings look for the trade-mark "TIMKEN". This famous trade-mark means the last word in quality, design and materials—the utmost in bearing performance—in short, all there is in bearings.

The Timken Roller Bearing Company, Canton 6, Ohio, U. S. A.

Timken Bearings, Timken Alloy Steels and Tubing and Timken Removable Rock Bits.

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# Among the ASSOCIATIONS

### Washington Prepares for New Era

Purchasing Agents of National Capital Gear Association Activities for Better Service To Membership

In recognition of the changed industrial and marketing conditions born of the war period, and the new and greater responsibilities and opportunities that confront men in Purchasing, the directors and officers of the Purchasing Agents Association of Washington, D. C., are gearing association activities to the end that their members may be better equipped to accept the challenge of these opportunities and their added responsi-

Now that the importance of efficient procurement to successful production, sales and profits is receiving increased recognition, it is the purpose of the association management to make the association and its committees a research laboratory and more intensive experience exchange. It is pointed out that war-time procurement provided industrial purchasing agents with greatly enhanced responsibilities, new concepts of procurement and its place in the over-all picture of production. As so vividly emphasized by the dictates of war, materials are bought to accomplish a purpose - to perform an end result, and it is felt that purchasing agents must continue to carryon in that light, and continue to cooperate with and secure the cooperation of planning and production and sales with that fact in mind.

#### The New Era

Further, they feel that industrial management now recognizes that the mere figures on an invoice by no means reflect the true economies of efficient buying, these being found in dependable scheduling to keep material smoothly flowing through production, material turnover, practical inventories and other factors. As emphasized by E. P. Scully, first president of the Washington association, and former Eighth District Vice President for the National Association of Purchasing Agents, it is realized that Purchasing Agents spend from 35 to 50 cents of each company dollar, and accordingly it is felt that they have a greater stake in the business than any other department. And as stated by Mr. Scully, it is the responsibility of purchasing agents to synchronize their thinking, their planning and their efforts to purchasing for profit. This calls for a keen understanding of materials, methods, processes and markets and suppliers, to the end that Purchasing Agents may intelligently collaborate with management, planning, engineering and production on materials

and specifications in addition to carrying out their responsibilities in working with suppliers and contractors. As so aptly expressed by Vice President Albert W. Zackey of the National Association, it is realized that Purchasing Men will not be "fenced in" if they think in terms of sales and production as well as terms of materials for production and mainte-

It is the feeling of the directors and officers of the Washington association that this progressive thinking must be established on a firm foundation. They point out that of necessity the Purchasing Agent must have an intimate knowledge of his own company, its facilities, material requirements, and the end use of its products, and, furthermore, the Purchasing Agent should also have an intimate knowledge of his suppliers and contractors. Likewise they must be familiar with the facilities and abilities of these sources to render dependable servce. And, it is felt to be of major importance that the Purchasing Agent have a basic knowledge of the new developments in materials, processes, methods, finishes and equipment that have been introduced into the industrial world in the past few years.

To this end it has been the aim to put the association on what may truly be termed a "One for All and All for One Basis." Incidentally, all of the members (there are 42) with the exception of three new ones, are members of one or more of the association's 12 practical working committees.

#### Create New Products Committee

This year a new committee was created which it is felt will prove of incalculable benefit to the membership. This is a New Products Committee. The chairman is A. W. Alexander, assistant purchasing agent for the Engineering and Research Corporation of Riverdale, Md. Mr. Alexander is one of those fellows who like to delve into new technical developments -plastics, electronics, new alloys, new coating materials, and so on. Three other members of this committee likewise are "new products minded." They are R. M. Brennan, Purchasing Officer for the District of Columbia, E. P. Scully, Director of Purchases for the Engineering and Research Corporation, and Arthur B.

This committee will carefully scan news of new developments, and make (Continued on page 214)

#### DISCUSS STEEL SITUATION AT MILWAUKEE

Incident to changing supply and demand conditions, discussion on the steel situation featured by a talk on "Cold Finished Steels" by Robert L. Mitenbuler, Bliss & Laughlin, Inc., Harvey, Ill., and on "Hot Rolled Steels" by C. W. Berger, Allis Chalmers Mfg. Co., West Allis, Wis., proved of unusual interest at the September 11 meeting of the Purchasing Agents Association of Milwaukee. Following this discussion, Paul A. Karll, Webster Electric Co., Racine, Wis., led a 'Get Acquainted Period."

The applications of the following were accepted for active membership: Raleigh O. Bossman, Clark Manufacturing Co., Milwaukee; Hugh C. Zerbe, Quaker Stretcher Co., Kenosha; Willard F. Witzell, Reltool Corp., and Charles B. Johnson, Chain Belt Co., Milwaukee.

#### 27 Committees

The Milwaukee Association has an unusually diversified lot of committees serving the membership, these including a committee on Plastics, one on New Products Developments, and one on Office Supplies and Equipment. The Committees and their chairmen are as follows: Educational, Joseph W. Nicholson,

City of Milwaukee.

Entertainment, Kenneth E. Groth, Stolper Steel Products Corp.

Employment and Welfare, Edwin L. Janke, Jos. T. Ryerson & Sons Inc. Program, Edward L. Block, Unit Drop

Forge Div. of Fuller Mfg. Co. Membership, Walter E. Radke, A.

George Schulz Co.

Publicity, Raymond W. Brick, Carnation Co.

Exchange Bureau, Frederic G. Syburg, Chain Belt Co.

Legislative, Elmer R. Wustrack, A. Kieckhefer Elevator Co.

Music, Fred W. Radke, Smith Engineering Works.
Constitution & By-Laws, Loy M. San-

ford, Motor Castings Co.
Attendance and Reception, Karl F.

Kattner, The Oilgear Co.

Public Relations, Emil H. Jones, E. R. Wagner Manufacturing Co.

Commodity Group and Special Subjects, Charles E. Bradley, Loeffelholz Co.

Non-Ferrous Metals, James A. Friend, Nordberg Manufacturing Co. Chemicals and Paints, J. Robert Rus-

ton, S. C. Johnson & Son.

Alloy & Carbon Steels, Clifford C. Bremmer, Interstate Drop Forge Co. Castings (all types), Walter H. Wenzel, Twin Disc Clutch Co.

Coal, Wm. A. Gamble, Milwaukee-Western Fuel Co.

Office Supplies & Equipment, Alvin G. Buchholz, H. Niedecken Co. (Continued on page 222)

# **MODERN**

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Moly shovels, spades and scoops are made in all types, sizes and weights required for

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# Multi-Profits from Palletizing

With box-car and storage tonnage at an all-time peak, heavy merchandise must be packed, put aboard or stored as quickly as possible.

The most efficient and proven way to cut labor costs and help speed up this tonnage is through the use of pallets. Merchandise can be stacked to the roof if necessary. Bound securely with Stanley Steel Strapping, the goods can be handled by one operator in a fraction of the time formerly employed by two or more men . . . and safely!

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The Stanley Works, Steel Strapping Division, New Britain, Connecticut

# STANLEY

# STEEL STRAPPING AND CAR BANDING SYSTEMS

MEET ALL FEDERAL STRAPPING SPECIFICATIONS

(Continued from page 212)

regular reports to the membership. It is realized that all of the members will not be concerned with all new developments. Yet it is felt that there are many new materials, products, machines and tools that are of first interest to all of the members, and it will be up to the committee to so present new thought to the membership that they will as a whole understand the importance of new developments.

#### **Diversified Industrial Representation**

The membership of the Washington Association is quite diversified, and in addition to Federal Government purchasing officers, includes municipal purchasing, railroads, airplanes, electronic equipment, brewing, textiles, and industrial equipment of varied types. All, it is felt, will be interested in new developments in steels and the non-ferrous metals, and alloys, plastics, and synthetic rubber. Take plastics-this is an unusually broad subject, and should prove of interest to all members from some angle, whether it be molded products, adhesives, protective coating materials, insulation, impregnating materials, laminating materials, electrical qualities, or sheer eye appeal.

It will be the aim of the New Products Committee to present the broad aspects of new materials, products, and equipment in their varied applications. As stated, the fact should not be overlooked that though some of the members may not be concerned from the standpoint of company use, the utilization of new developments by their suppliers may be of first importance from the standpoint of quality products, service and costs.

products, service and costs.

It is the purpose to have the association's New Products Committee, Metals Committee, Educational Committee and Program Committee collaborate in developing information, and arranging meeting programs.

#### The Metals Committee

The Metals Committee is also a new one. It is felt that this committee will be of great value to the membership from many angles. Undoubtedly the industrial world will be presented with reams of news on new and improved metals, and alloys, and new uses for both ferrous and non-ferrous metals, and new thought on their utilization and fabrication. It is expected that the Metals Committee will be able to furnish the Program Committee, and also the New Products Committee with new and worthwhile educational material for presentation at the meetings. Likewise, its findings will be a guide to activities by the Educational Committee.

There is also a new committee in the form of a Food Products Committee, headed by B. K. Foster of the Recreational and Welfare Association, Federal Government. It is felt that this committee will have from time to time much information of practical value to food buyers for hospitals and other institutions as well as for industrial inplant feeding.

Two committees that should be of practical value to the local purchasing

(Continued on page 218)



# VAN DORN WELDMENTS FOR MODERN MACHINES AND DIESELS

- It doesn't pay to put new, up-to-the-minute machines or diesels . . . on oldstyle, cumbersome supporting bases. Van Dorn welded bases—fabricated from steel plate and steel shapes—offer modern, efficient, functional advantages to builders of diesel engines and machine tools.
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- Skilled and experienced design engineers . . . complete fabricating, processing and handling facilities . . . specially trained workmen . . . exacting supervision, all contribute to the superiority of Van Dorn Weldments. Write for illustrated booklet and complete information.

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## HOW ISOLATION LOCKING PRINCIPLE WORKS!



Security is a patented combination of ordinary nut and oval steel collar with ears, fabricated into unit by press fit of oval collar into counterbore in crown of nut.



Threads in collar are misphased so that bolt pushes collar away from bottom of counterbore distance of ½ to ½ thread before engaging.



Bolt passing through oval collar forces collar into round, isolating it from sides of counterbore also. Collar is now completely isolated from nut and is tightly locked to bolt.

Nut bears entire load, leaving collar free of load stress. Nut is kept from turning by ears of collar, which is locked tightly on bolt.

#### **RE-USE WITHOUT SELECTIVE FITTING!**

Because Security's oval, spring steel collar is unusually RE-SILIENT, Security Locknut can be used and re-used time and again on any bolt of like size without loss of locking power, regardless of maximum or minimum thread diameter tolerance. No matching! Just pick up the nut and apply it with ordinary wrench on any bolt of like size and it stays put until you take it off! Safe No cotter key to forget or wear through ... No bolt tension required. Locking power not affected by temperature or presence of lubricants ... No ragged projections to snag flesh or clothing ... Vibration can't shake Security loose!

**Economical** No holes to drill ... No extra parts to handle or store ... No maintenance expense—can be reused time and again without selective fitting on any bolt of like size and regardless of thread diameter tolerance or normal wear.

Handy No fixed positions of adjustment . . . No special tools needed to install or remove . . . No extra parts to worry about!

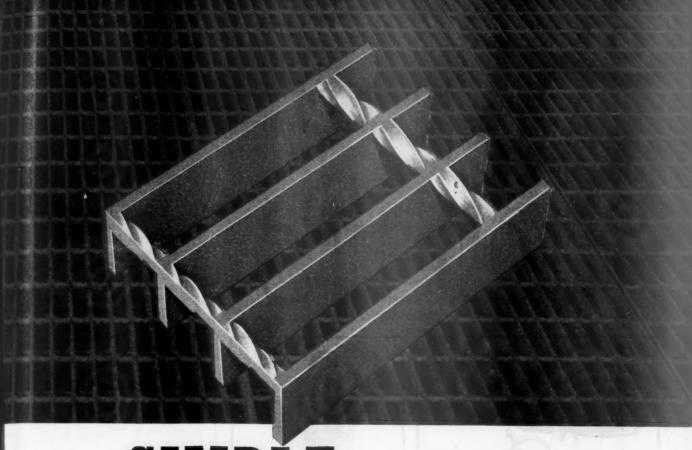
### SEND FOR FREE SAMPLE, PRICES, DATA

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You are invited to prove to yourself at our expense the advantages Security Locknuts have over all other types of bolt fasteners. Send today for free testing samples and put them to work on your toughest assignment. Now made in National Course, National Fine, in sizes, as follows:  $\frac{1}{2} - \frac{5}{4} - \frac{3}{4} - \frac{7}{8} - 1$ .

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## SIMPLE, isn't it?

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Actually Blaw-Knox Grating is a onepiece, electroforged steel "material" which can be made to measure or cut to fit . . . Note these exclusive features:

- 1. Self-cleaning, no sharp corners to clog.
- 2. Maximum open area for light and air.
- 3. Easy to maintain . . . paint reaches entire surface.
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- 5. Twisted cross bar provides safe footing at all times.

Write for complete catalogue on grating.

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Boston—Brown-Wales Co.
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NEW YORK Albany—Edwin D. Shultz Buffalo—Reecon Company,

OHIO Cincinnati — Wyman Engineering Cleveland — H. W. Kaiser Co. Columbus — F. L. Purdy Co. Toledo — George J. Haase

OKLAHOMA Tulsa-Frick-Reid Supply Corp.

PENNSYLVANIA Altoona — Altoona Pipe & Steel Supply Co. Philadelphia — H. T. Potts Company

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(Continued from page 214) profession are the Publicity Committee and the Public Relations Committee, These committees it is felt should be able to keep quite busy, and constructively so. The Publicity Committee it is felt can utilize to advantage the information available from other committee activities as well as the National Association Commodity and business reports, in gaining local press publicity, and other forms of publicity with industry itself. Public Relations involves another phase of publicity in working with suppliers, trade groups, local business associations, government and municipal officials and others. It is hoped that the Public Relations Committee will be able to furnish the Publicity Committee with working ammunition, and vice versa.

Then there are membership and attendance committees, acquaintance and entertainment committees — the latter being a divided responsibility of the program and entertainment committee. All of these committees have much in common, and it is the plan to hold joint committee meetings with the officers and directors to work out the best plans of operation.

So far as membership is concerned, the association is not immediately concerned with having merely a large enrollment, though the way is open for a roster running into three figures. The directors and officers are first concerned with having aggressive heads of diversified centralized purchasing departments, and that is the goal of the membership committee to help the membership committee gain the interest and membership of prospective members.

It is the feeling of all that the new industrial era now opening up presents unusual opportunities to the Purchasing profession, and the purpose of the new aggressive activity is to the end that all members will gain in a practical way from cooperative effort.

### CINCINNATI ASSOCIATION AT CLOVERNOOK COUNTRY CLUB

Lee Clayton, Purchasing Agent for the Philip Carey Manufacturing Co., Lockland, Cincinnati, Ohio, new president of the Cincinnati Association of Purchasing Agents for the 1945-46 term, presided at meeting of the association held August 28th at the Clovernook Country Club. Other officers who took up their duties at the same time are Edward C. Frederick of the Frederick Steel Co., and J. R. Breese, Breese Bros. Co., vice presidents; Harold R. Kessler, Cincinnati Shaper Co., secretary; C. Paul Eberhart, Schenley Distilleries, Inc., treasurer; A. H. Bader, Joseph T. Ryerson & Sons Co., national director; and Milton B. Blersch, American Tool Works; Paul D. Crary, Cincinnati Gas & Electric Co., and Harry C. Dick, Redeker & Dick, trustees.

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The afternoon was given over to lunch and a golf party, followed by business meeting after dinner with Ray Nolting, head football coach at the University of Cincinnati as principal speaker.

(Associations-Continued on page 220)

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EVERAL years ago, in a Pittsburgh electrical manufacturing plant, a disc or "cookie" die was placed in operation. It was made of Diecarb, Firth-Sterling's newest, original, sintered carbide development for blanking dies. This "cookie" die blanked a circle of silicon electrical sheet .025 inch thick, to be used in rotors and stators.

It proved so successful that since then two other similar Diecarb dies have been put to work—all averaging 50 to 60 million blanks per grind, as compared with 90,000 pieces per grind with high speed steel dies.

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The original die, at the latest count, had produced the unprecedented total of over a half billion stampings, and was still going!

In fact, the life of these remarkable Diecarb dies is not yet determined because all dies so far made are still in use.

Diecarb can be used for blanking and forming a diversity of materials including metals, plastics, paper, etc. It operates successfully on thicknesses up to 7/16 inch. It is proving unmatchable for high production operations, saving both downtime and maintenance.

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You probably are thinking now about a new peacetime product. You're also probably thinking about marketing that product . . . how to trademark it, package it or how to get your story across at the point of sale, among other things.

That's where Dennison comes in. Whatever your marking problem, remember there's more than a century of specialized experience at your beck and call here in Framingham. So when the time comes, put your problems up to



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Please send me without obligation, booklet "If You Could Only Be at Every Point of Sale."

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#### MILWAUKEE ASSN. SPONSORS PURCHASING CLASS

A purchasing class at Marquette Uni-Evening School, Milwaukee. which began September 27th, is sponsored by the Purchasing Agents Associa-tion of Milwaukee, Wis. The class is being directed by Joseph Nicholson, City Purchasing Agent, City of Milwaukee, assisted by Prof. George W. Knick of the Marquette Faculty, and by member purchasing executives of Milwaukee's industries. The class meets on each Thursday evening, 7:30 to 9:20; tuition fee \$10 per semester.

"Although primarily directed to those engaged in purchasing, the class is of great value to those engaged in management, production and sales-particularly to those who wish to broaden their knowledge of business functions and supplement their training and background for wider executive work", states bulletin issued by President Lyall C. Stilp of the

Milwaukee Association.

"During the time this class has been held it has built an enviable reputation for teaching the fundamental principles of purchasing and for supplying a "refresher" course for those who have spent some time in the Purchasing profession. Many of our members have attended this class as students and have profited from the lectures, exhibits, sound films and other instruction supplied by members of our committee on education who have had many years of experience in their particular fields.

"From this class have come many graduates who are proving themselves valuable additions to Purchasing staffs of our members. Your assistants will increase in value to you as a result of the training

they will get in the class.'

#### ATTENDANCE PRIZE AT ST. LOUIS MEETINGS

Last year the Purchasing Agents Association of St. Louis inaugurated an attendance prize plan, which is to be continued this year. The attendance prize for each meeting will be \$5. The name of each member of the association is placed in a hat whether or not he attends the meetings. There is but one drawing and the member must be present in order to collect. If he is not present the prize is added onto the next meeting and so on until a member called is Last year's experience, says the St. Louis Bulletin proved that at every third meeting the three-fold prize was won. Accordingly, the absent members lost out.

#### WESTERN MASSACHUSETTS ASSN. **ENJOYS CLAMBAKE**

The Purchasing Agents Association of Western Massachusetts held an Old Fashioned Stone Clambake on August 23rd at Turner Park, Longmeadow, Mass. Chet Jersey of the Stacy Company, Boston, was chairman of the committee in charge of the affair.

(Association continued on page 222)

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This Reiner Beamer illustrates an advantage of Reliance V\*S Drive important to remember when designing production machinery. Reliance Motor V\*S control unit and all necessary accessory equipment can be built right into the machine, with no waste of space.

Reliance V\*S Drive is an all-electric, adjustable-speed drive, operating from a-c. circuits. It is available in from 1 to 200

hp. capacities, either rotating or electronic system. It provides remarkable ease and flexibility of control—with smooth starting, stopping and speed changes — automatic reversal at any desired point — and other advantages which help to improve quantity and quality of output, improve uniformity, save time and cut costs. Write or call a Reliance office for Bulletin 311 describing the V\*S Drive.

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OCTO



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BOGEN Communo - Phone, paging and music distribution equipment, repays its nominal initial cost many times. Instant communication between executives and personnel introduces a new conception of efficiency. Records and accounting are immediately available, supervision is vitalized and messenger service minimized. Furthermore, telephone requirements are lightened-a major economy in itself. In production departments, the dissemination of music is a proven factor in bettering morale, reducing fatigue and "upping" production. BOGEN equipment-diversified and flexiblemeets every requirement . . . economically! Illustrated literature on request.

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This Kelly Field, Texas, unit is one of the finest installations in the country. Controls 10 remote Administrative Centers, each with multi-station



with multi-station sub-master con-trol of speakers in sub-sections. Sound-casts to 157 areas, two-way talk to 10 master sub-sta-tions or any unit in system. In-cludes radio,



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#### W. J. ROEMER ADDRESSES METROPOLITAN ASSISTANTS' CLUB

W. J. Roemer, Purchasing Agent, The Bristol Company, Waterbury, Conn., was guest speaker at the first fall meeting of the Metropolitan Purchasers' Assistants



W. J. Roemer, Purchasing Agent, The Bristol Co., Waterbury, Conn.

Club at Midston House, New York, September 11. Mr. Roemer spoke on "How Can the Purchasing Agent Help the Salesman". His paper, briefing the background of both the salesman and the purchasing agent, appears in full in this issue of Purchasing Magazine. Mr. Roemer has been associated with the Bristol Company, manufacturers of industrial recording, controlling and indicating instruments, for 22 years. Seventeen years were spent as sales engineer and manager of the service department, and during the past five years he has been Purchasing Agent.



Executive Secretary J. H. Leonard and President Harold W. Macintosh of New York Association were visitors.

The meeting was featured by a record attendance, more than 50 persons being present. Among the visitors were President Harold W. Macintosh and Executive Secretary J. H. Leonard of the Purchasing Agents Association of New York, and A. M. Morse, Jr., manager of Purchasing Magazine.

#### 1 1 1 MAGNESIUM EDUCATIONAL PROGRAM, TWIN CITY ASSN.

The Hills-McCanna Company, Foundry Division, Chicago, presented at the September 12 meeting of the Twin City Purchasing Agents Association, in cooperation with the Dow Chemical Company and Revere Copper and Brass, Inc., the

Magnesium Educational Program, which has been presented at various association meetings. The American Institute of Electrical Engineers cooperated with the Purchasing Agents. In addition to a display of magnesium sand, permanent mold and die castings, sheet, rod, tubing, extrusions, forgings, etc., the meeting was featured by a showing of the picture "Magnesium—The Miracle Metal." There were short talks by representatives of Revere Copper and Brass, Inc., Dow Chemical Co., and Hills-McCanna Company. The meeting was held in the Raddison Hotel.

#### LOUISVILLE P. A.'s HOLD AUGUST MEETING ON ELEANOR T

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The Purchasing Agents Association of Louisville, Ky., held its August meeting aboard the Eleanor T., houseboat of E. J. Theobald, August 21st. The boat left the Louisville Municipal Harbor at 5:30 P.M. and returned at 11:00 P.M., with a stop on the Indiana shore for dinner at the Club Rubyiat. It is the custom of the Louisville Association to adjourn business meetings during June, July and August, but social meetings are arranged for these months in order to keep the members in contact with one another during this period.

#### 1 1 1 MILWAUKEE MEETING

(Continued from page 212)

Petroleum Products, Carl W. Failmezger, Socony-Vacuum Oil Co., Wadhams Divn.

Lumber, Howard F. St. George, Shadbolt & Boyd Co.

Traffic, Oscar M. Bonesho, Hummel & Downing Co.

Paper, Walter H. McCarty, Milprint,

Pig Iron & Scrap, George R. Mills, Belle City Malleable Iron Co.

Pipe & Fittings, Chester Taeble, B. Hoffman Manufacturing Co.
Plastics, Charles F. Preston, Eclipse

Moulded Products Co.

New Products Developments, J. T. Clancy, Lakeside Laboratories, Inc.

#### WASHINGTON STATE ASSN. STARTS FALL PROGRAM

Industrial, commercial and governmental purchasing agents from all points in Western Washington gathered Thursday evening, September 13th, at the Washington Athletic Club, Seattle, for the first Fall meeting of the Purchasing Agents Association of Washington. H. F. Price, president of the State Association, presided.

Featured on the program arranged by Vice President R. Guy Frederick, were:

1. Dr. Frank Williston, acting executive head of Far Eastern Dept., University of Washington, who spoke on "Post War Problems of China".

(Continued on page 226)

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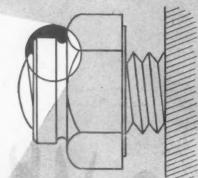
LOCK NUT

GOES ON LIKE THIS

GRIP THREADS

WORKING

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TIGHTENS LIKE THIS

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#### WHEN YOU APPLY A LAMSON LOCK NUT TO A BOLTED ASSEMBLY.. AND IT WILL HOLD TIGHT RIGHT WHERE YOU LEFT IT

• When you apply a Lamson Lock Nut you spin the nut on the bolt thread as freely as a Class 3 fit permits, until the bolt thread engages the thread in the locking crown collar. Then you'll need a wrench to seat the nut against the work—for it's the grip of the threads in the locking crown collar that locks it on the bolt.

Here's what happens. When the bolt is tightened by the nut, the "pressure flanks" of the working threads of the nut stress the bolt and force the collar back toward its original round form. As this occurs, the "non-pressure flanks" of the grip threads of the nut are engaged, and through them is applied the vertical pressure which locks the nut. There is no pitch interference since the thread has the same lead throughout.

Lamson Lock Nuts are tapped in the usual way, then the threaded portion of the locking crown collar is distorted from the round on opposite sides, causing it to grip the bolt thread like a vise. A resilient, permanent spring action is imparted by heat treatment to the locking crown collar of the nut. This truly is a lock nut—and it is all metal! Because it is all metal it can be used under any combination of these conditions—Heat: the Lamson Lock Nut is in use at elevated temperatures up to 800° Fahr. Ice: it is used in guns and motorized equipment in Alaska. Steam: all metal, it is unaffected by steam. Oil and Water: all metal, this nut is unaffected by either.

Re-use in the field is important when supplies are short and what is on hand must do the job. Re-use in domestic civilian applications is just as important to conserve supplies. In impartially supervised laboratory tests the Lamson Lock Nut held tightly after repeated applications, removal torque dropping less than 1 ft. lb. per cycle in 10 on-and-off cycles.

On applications where vibration and shock are severe, Lamson Lock Nuts are meeting specification requirements. They are made in standard sizes from #10-32 up to 2-inch diameters, and unless otherwise specified, are provided with a non-seizing, rust-resistant black finish. If you have applications where vibration shakes nuts loose—make your own tests with Lamson Lock Nuts. They may solve a problem for you. Ask for samples, or ask for a Lamson engineer to call and talk it over.

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"BOLTS ARE IMPORTANT!"—24-page booklet of currently useful information for buyers of headed and threaded products, and describing Lamson & Sessions' specialty fastenings which have wide industrial applications—now, and in the post-war period. Sent gratis,

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SUBSIDIARY OF DODGE MFG. CORPORATION, MISHAWAKA, INDIANA

(Continued from page 222)

the Association's General Discussions Committee, presented Walter Phelan, Craftsman Press, who lead a discussion on the subject "Is Cash Discount on the Way Out?" Participating were Frank A, Carson, Blake Moffitt & Towne, and E. A. Westfall, Stetson-Ross Machine Co.

An Educational Forum was held at 4:30 P. M. preceding the dinner meeting, at which time Carl C. Nissler, regional priorities manager, WPB, discussed "Reconversion Procedure" and M. R. Scott, acting sales manager, RFC, Seattle, outlined their Surplus Sales set-up. Russell Wetherell, chairman of the Association's Educational Committee, presided.

#### RECONVERSION IN THE SOUTH BIRMINGHAM MEETING

"Reconversion in the South" was the subject of meaty talk by M. E. Manuel, Production Manager for Production Foundries Division of Jackson Industries, Birmingham, at luncheon meeting of the Purchasing Agents Association of Alabama held at the Redmont Hotel, September 17th.

#### TRANSPORTATION PURCHASING DENVER MEETING

C. T. Carlsten, Purchasing Agent of the Denver Tramway Co., Denver, Colo., was the principal speaker at a meeting Denver Assn. of Purchasing of the Agents, Thursday, September 13th, at the Albany Hotel, Denver. His topic was Transportation Purchasing. He told about the system and procedure used in his department for the procurement of equipment and supplies needed to keep the street railway utility operating effi-ciently. He closed his talk with an observation on courteous treatment of salesmen and other callers at the Purchasing Department, stating: "One uses consideration and courtesy in his contacts not necessarily to reciprocate such attributes in others but because one believes himself to be a gentleman."

President L. R. Kendrick, who presided, briefly sketched the outlook for industry and commerce in the Rocky Mountain Region, painting an optimistic picture of the near future.

Commodity reports were presented on (non-existent) lumber by T. Matt Collier of Lumber Dealers, Inc., and on food items by Wm. F. Edwards of the Merchants Biscuit Company.

A color film on "Trout, from Egg to Creel" was shown by Dr. C. E. Hagie, Publicity Director for the Colorado State Game & Fish Department.

#### TRANSITION OF PRIORITIES SYSTEM NEW ORLEANS MEETING

"Transition of Priorities System" was the subject of talks by J. N. Beckwith, District Priorities Chief and Production Analyst, New Orleans, La., at the September 10 meeting of the Purchasing Agents Association of New Orleans at the Jung Hotel.

## They travel HALFWAY AROUND THE GLOBE to attend this "school"!



When the urgent call for defense—then war -production sounded throughout the nation, industry faced the huge task of swiftly training millions of "green" workers from all walks of life.

Carboloy Company—to fulfill its part in this tremendous undertaking-quickly expanded its long-established facilities for basic training—in fundamentals of carbide tool use and maintenance; immediately enlarged its training course quarters at Detroit. Since Pearl Harbor, industry and government have sent to this "school" supervisory personnel from 38 states and many Allied countries—including even

far-off Australia—halfway round the globe! Each man receives six days of intensive training covering actual shop work, practical "lecture" sessions, and discussion-reviews of Carboloy Training Films. He returns equipped to quickly pass this training along to supervisors and operators in his own plant. By this procedure, more than 2500 key men in plants engaged in vital war work have

been prepared to meet their carbide training needs swiftly and efficiently.

So valuable is this Training Course in effecting reduced machining costs and increased production through a proven method of centralized control on carbide use in each plant, that for years it has been a permanent part of Carboloy service. Plants reconverting to civilian manufacture are invited to enroll their key supervisors in this free course. It was a proven aid to war production and will be sound preparation for the highly competitive postwar era. Send for descriptive booklet-GT-155.

Effective training in carbide use, plus availability of low cost standard Carboloy Tools such as these, has played a vital role in warand will help plants prepare for the competitive postwar era.

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These strong, protective work gloves are the product of one of America's largest textile mills. They are Riegel-controlled—in one plant—from raw cotton to finished glove. This single close supervision of every detail results in unexcelled quality—durability—economy.

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#### FULL EMPLOYMENT AND RECONVERSION WASHINGTON, D. C. MEETING

Dewey Anderson, executive secretary of the Senate Small Business Committee and A. C. C. Hill, vice chairman in Charge of Civilian requirements, War Production Board, were the guest speakers at the early fall meeting of the Purchasing Agents Association of Washington, D. C., at the Mayflower Hotel on September 11.

Mr. Anderson, who at one time was a member of the California State legislature, formerly a director of the Office of Foreign Relief and Rehabilitation of the Department of State, and also chief of the American Hemisphere Division in the Office of Economic Warfare, highlighted his remarks on the Full Employment Bill now under consideration by the Congress, by stating that the bill is exceptional legislation and designed to head off post-war inflation. It places the responsibility on the Federal Government to sponsor and assure full employment in industry, Federal, state and local governments, and has as its objective a raising of the standard of living of the American people.

He explained that under the terms of the bill, the President shall submit a National Employment and Production budget each year as well as quarterly reports thereon to the Congress. He emphasized that the Government would have a "hands-off" policy on the operation of industry and that private enterprise must accept the challenge in the international competitive field; that the bill is also designed to stabilize the economy at rather high levels in an attempt to avoid the valleys and peaks in our national economy. He predicted that the chances of passage are mounting every day because the American people are behind the bill and that its opponents have not yet offered anything constructive as an alternative.

Mr. Hill's topic, "Reconversion" was of great interest to Purchasing Agents. It was his opinion that private industry will be producing at about pre-war levels around Christmas; that automobiles should be coming off the assembly lines at the rate of 250,000 per month by December and that production of refrigerators, washing machines and other household appliances should soon double or treble prewar production.

He called attention to the tendency of some manufacturers to produce and store for higher prices, and cited one particular case where new household appliances in popular demand were not being marketed because of the absence of a part which that manufacturer would not furnish until he secured a price adjustment. He also called attention to the time required for consumer durable goods to reach the retail level, stating that a six-months' pipe line from factory to store must be expected.

Of interest to textile buyers, and certainly known to many of them, the soft goods situation was rather desperate before V-J Day. Mr. Hill remarked that

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THE THOMAS STEEL CO. . WARREN, OHIO COLD ROLLED STRIP STEEL SPECIALISTS (Continued from page 228)

we probably had less soft goods for civilian needs in this country at that time than were available in Germany and England; In conclusion, he stated that the War Production Board is trying to clear up all shortages as rapidly as possible and he predicted that the WPB would probably "bow out" by the end of the year.

Following the addresses of the guest speakers, a question-and answer period followed, which brought to light many interesting angles to these important prob-

lems of the day.

Through the courtesy of the Westinghouse Electric Corporation, an interesting movie on "Electronics" was shown.

DISCUSS CHRISTMAS PARTY BIRMINGHAM

Two important activities were on the agenda of the August 9th meeting of the Purchasing Agents Association of Alabama held in the Redmont Hotel at Birmingham. No. 1 was looking ahead quite a bit and was a discussion of the Christmas party, and No. 2 was a round table discussion of plans for increased membership.

"FUEL PURCHASING FREEDOM" **NEW YORK MEETING** 

"Fuel Purchasing Freedom" was the theme at the first fall forum meeting of the Purchasing Agents Association of New York on September 18th at the Builders' Exchange Club. Speakers were Julian E. Tobey, director, Fairmont Coal Bureau; Earl C. Payne, Consulting Engineer, Consolidation Coal Company, and Graham Granger, Consulting Engineer, Eastern Gas & Fuel Association. The forum presented an interesting story of fuel economics and the advantages of new or modernized combustion equipment flexible enough to burn the range of coals available in the Eastern market.

At the dinner meeting which followed, guest speaker was Paul E. Burbank, Development Manager, Air Cargo Depart-ment, United Air Lines, who discussed the successful exploits of cargoliner air service in moving high priority materials during the war, and the future of cargo air service in the transportation of com-

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modities.

Leonard Marks 25th Year

J. H. Leonard, executive secretary of the New York Association—the first and only secretary of the association, completed in September his 25th year with the association, as did his secretary.

President H. W. Macintosh in his monthly message to the membership in the Bulletin, states: "We as Purchasing Agents are a vital part of top management. We have a real job ahead in securing necessary components many of which will be in short supply for months to come. The Purchasing Agent, with

(Continued on page 234)

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#### THE VOICE OF BATTLE-IN PLASTICS

• Here's something new in telephones. It looks much like an ordinary phone—but this phone needs no batteries or other outside power. And that meant a lot wherever battles were fought.

Just connect two phones together with a pair of wires—and talk. No power failures to worry about. The trouble, though, is that such "sound-powered" phones must be made with great precision. Ordinary molding processes just wouldn't do.

So RCA engineers brought their problem to No. 1 Plastics Avenue. Result: a battle station telephone that can take it and still dish out the orders. The Navy tests it by dropping it down a 6-foot chute at an 80-degree angle.

G. E.'s complete plastics service—with many new techniques perfected during the war—is ready to serve all industry in the planning of better peacetime products. Bring your plastics problem to G. E.—the world's largest manufacturer of finished plastics products. Write to Plastics Divisions, General Electric Company, 1 Plastics Avenue, Pittsfield, Mass.

Hear the General Electric radio programs: "The G-E All-Girl Orchestra" Sunday 10 p. m. EWT, NBC. "The World Today" news every weekday 6:45 p.m. EWT, CBS "G-E House Party" every weekday 4 p.m. EWT, CBS.



#### G-E Complete Service — Everything in Plastics

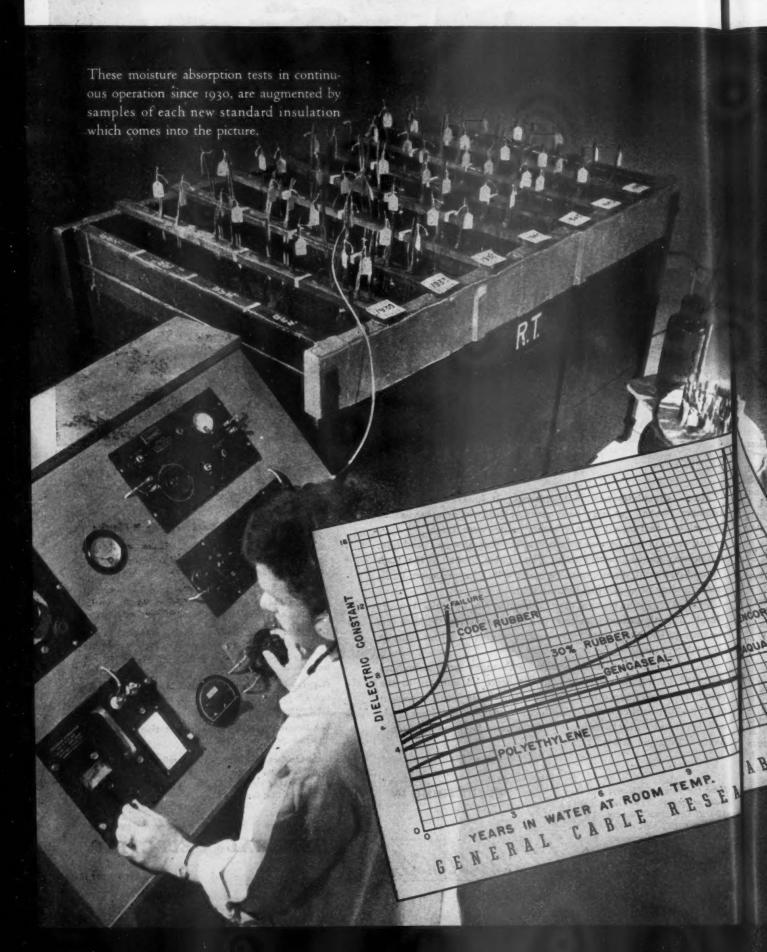
Backed by 51 years of experience. Plastics are not new to General Electric. We've been designing and manufacturing such products ever since 1894.

- G-E Design and Engineering Service. Our own industrial designers and engineers work together. Result: plastics parts that are both scientifically sound and good-looking.
- G-E Mold Service. Fully equipped toolrooms. Skilled craftsmen with an average precision mold experience of 12 years. G-E molds are chromium plated for longer life.
- G-E Quality Control. Our plastic products may pass through as many as 160 inspections and analyses. Negligible Army-Navy rejections.
- G-E Research works continually to develop new plastics materials, processes, application
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Preparedness for Post-War Industry Developments based on cumulative data long in preparation

In the comparison of rubber insulating compounds and the new synthetics, it is easy and hazardous to jump at conclusions. Through the years, General Cable has been broadening its base of data by which to predict with some assurance the performance to be expected of the new materials. And out of practical experience, it recognizes, too, that there is no substitute for time in the determination of the industry's final answers.

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These and other tests, extending over years of simulated service conditions, prepare General Cable to furnish synthetic insulations for all operating conditions.

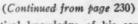
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OCTO



a practical knowledge of his company's materials, requirements. sources of supply, market conditions and prices, will be responsible in large part for the position in which his company will find itself."

The membership committee reported the consideration of twelve new applications for membership.

#### NEW ENGLAND ASSN. MARKS 40TH ANNIVERSARY

The New England Purchasing Agents Association, 80 Federal Street, Boston, Mass., will hold on October 9th its 40th Anniversary Meeting to commemorate the founding of the organization, The first secretary of the association, Herbert L. Ogden, states the New England Purchaser, recorded the following in minutes book No. 1 under date of September 28, 1905:

"At a meeting of Purchasing Agents held at 6:30 o'clock this evening to consider the ways and means of securing successful and mutually helpful meetings of Purchasing Agents, it was unanimously 'Resolved that it is the sense of this meeting that a society of Purchasing Agents should now be formed.' Mr. Lillie was elected temporary secretary.

"Motion was made, seconded and carried, that we proceed at once to the adoption of a Constitution and By-laws.

"A Constitution and By-Laws was discussed and adopted, a copy of which will be found in the opening pages of this book.

"On motion it was voted to proceed to the nomination and election of officers for the ensuing year, resulting in the election of Mr. N. W. Lillie, president; Mr. J. F. Kemp, vice president; Mr. H. L. Ogden, secretary-treasurer; and Messrs. N. W. Lillie, J. F. Kemp, H. L. Ogden, C. N. Chevalier, C. F. Broughton, F. P. Mooney, and H. L. Hall, executive committee.

"Adjourned at 10:15 to meet at the

Parker House on Friday, October 20." Current officers of the New England Association are Frank G. Kennedy, Simplex Wire and Cable Co., president; Lloyd A. Lowe, C. H. Sprague & Son Co., vice president; Kendrick Burns, S. D. Warren Co., treasurer; and H. J. Graham, secretary.

#### 1 1 1 ST. LOUIS STARTS FALL SEASON

The Purchasing Agents Association of St. Louis held its first meeting of the new association year September 18th at the Coronado Hotel, St. Louis. Feature speaker of the evening was Rev. P. J. Holloran, president of St. Louis University, whose subject was "Leadership in a Disillusioned World." Also, Thurman W. Payne, Chief of the Sales Section, Surplus Property Division, Reconstruction Finance Corporation, reviewed the high spots in the mechanics of dealing for surplus commodities in a brief talk on "It is Easy to do Business with RFC.



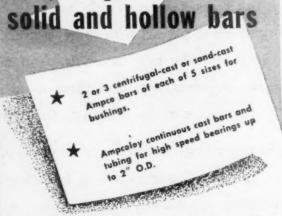
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You can avoid costly delays and tie-ups of machines due to bearing or bushing failure, by having on hand this stock of Ampco bars for fast replacement,

Ampco Metal is a superior aluminum bronze of closely controlled quality, with exceptional wear resistant and bearing characteristics. It lasts several times as long as ordinary bronzes under severe conditions of wear, impact, fatigue, and corrosion.

You can select Ampco Metal on its record-knowing it stands up in service and justifies your sound judgment in selecting it. To be sure of having it on hand when need arises, consult the nearest Ampco field engineer on selection of grades for your reserve stock.

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## MORE THREAD KNITTING

Twin-Fast's cylindrical construction (not tapered) provides greater thread area for more intimate contact with wood fibres-greater holding power.

Provides better fit and fill of the pilot hole, too! Because of Twin-Fast's cylindrical construction, the threads penetrate the wood fibres, right down to the point of the screw - no matter how deep the pilot hole. The threads approaching the point of a tapered screw frequently fail to take hold - especially when the pilot hole is too deep. Twin-Fast's tighter seating enables shorter screws to be used without sacrificing holding power.

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Single, shurp, contered point where twin threads terminate as-sures quick starting, self-centering, balanced driving. No eccentric 'crawling" - no misalignment!

Twin-Fast Screws come in steel or brass with round, flat, or oval beads—standard sizes and thread count.

OR FASTER PRODUCTION-STRONGER CONSTRUCTION BY ALL MEANS BUY BONDS! TWIN THREAD WOOD SCREWS

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### YOU GET:

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#### WEATHER IN WAR OR PEACE MONTREAL MEETING

Professor George H. T. Kimble, first Professor of Geography and Chairman of the Department of Geography and Director of McGill Meteorological Service, who served five years during the war in the Royal Navy Meteorological Service with the rank of Lieut.-Commander, was guest speaker at the September 18th meeting of the Purchasing Agents Association of Montreal, his subject being "Weather in War or Peace."

On September 5th, members of the association had a pleasurable golf game and dinner at the Summerlea Golf and Country Club Inc.

## 1 1 1 QUALITY OF PRODUCTS RECEIVED ROCHESTER

"The Purchasing Agent and the Quality of Products Received" was the subject of an extremely interesting discourse by Dr. Martin A. Brumbaugh, professor of statistics at the University of Buffalo, at the September 26th meeting of the Purchasing Agents Association of Rochester, N. Y., at the Rochester Club. Dr. Brumbaugh is editor of the publication "Industrial Quality Control."

#### SURPLUS PROPERTY DISPOSAL BALTIMORE

A. H. Graham of the Richmond Agency Reconstruction Finance Corporation in charge of surplus property disposal, discussed the subject of surplus property disposal at the September 19th meeting of the Purchasing Agents Association of Baltimore, at the Lord Baltimore Hotel.

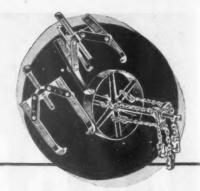
#### POST WAR ECONOMY PITTSBURGH MEETING

Russell Weisman, associate editor, Cleveland Plain Dealer, Cleveland, Ohio, was guest speaker at the September 18th meeting of the Purchasing Agents Association of Pittsburgh at the William Penn Hotel. His subject was "Planning for our Post War Economy." President A. W. Anderson announced that the association started the season with 259 members.

#### THE STEEL SITUATION DALLAS MEETING

"The Steel Situation from The Buyer's Viewpoint" was the subject of an address by W. S. Mosher, Jr. of the Mosher Steel Co., at the August 9th meeting of the Purchasing Agents Association of Dallas. A feature of the meeting was the showing of the picture "Behind the Annual Report", through the courtesy of the United States Steel Corporation.

On September 25th, the Dallas Association members were guests of the Fort Worth Association at the 25th Anniversary meeting of the latter.



#### ARMSTRONG-BRAY Gear and Wheel Pullers

Prompt Shipment

Save hours of time, prevent costly breakage and long shut downs.

STEELGRIP Standard Rigid Arm Gear and Wheel Pullers are of improved design. Will not slip from work. Arms are forged and heat-treated. 2-arm, 3-arm and special designs. 34 types and sizes.

CHAINGRIP Universal Pullers pull wheels, solid gears, pinions, etc., even at considerable distance from end of shaft. Proof-tested chains have both chain hooks and special pulley hooks. 3-ton and 12-ton capacities.

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#### Immediate Delivery!



You can depend upon Redington to make immediate delivery of these sturdy, 100% accurate Counters—"Watchdogs of Production." In models to fit punch presses, pumps, screw machines, packaging machines . . . conveyor lines, can making and box making machinery . . . in fact, all types of machinery and production lines. Easy to install. Write for Catalog.

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Originators of Color Branded Rolls

\*The Roll with the Red Wabbler

#### \*"UNITED SPECIAL" ALLOY STEEL

(Identified by Red Wabbler)

We believe this to be the most outstanding steel roll available to industry. Heat-treated to specific service requirements, its balanced alloy content assures maximum strength and extremely high wear-resistance. Eight distinct grades are available ranging in hardness from 30 to 55 Shore. Variations of physical properties to meet special conditions are controlled by carbon content, alloying composition and heat treatment. These rolls have an extremely wide application. UNITED engineers will gladly furnish you complete technical data, without obligation, of course.

\*One of A Complete Line of 15 UNITED ROLLS Individually Color-Branden for Type Designation

The 15 principal classifications comprising the UNITED ROLL LINE . . each one a roll type successfully used in modern industry . . . are individually and distinctively colorbranded to designate grade, composition and service application. Roll election is thereby made easy and accurate.

UNITED ROLLS are the product of advanced metallurgical research and more than 40 years experience in roll design and manufacture.

#### UNITED ENGINEERING AND FOUNDRY COMPANY

Pittsburgh, Pennsylvania

Plants at PITTSBURGH · VANDERGRIFT · NEW CASTLE · YOUNGSTOWN · CANTON

Subsidiary: Adamson United Company, Akron, Ohio

Affiliates: Davy and United Engineering Company, Ltd., She Dominion Engineering Works, Ltd., Montreal, P. Q.

\*The World's Largest Designers and Makers of Rolls and Rolling Mill Equipment



merican business has fought this war to the limit of its mighty abilities.

That is why we are prouder than ever that

## HOWARD BOND

has long been known as



"The Nation's Business Paper"



THE HOWARD PAPER MILLS . . . URBANA, OHIO

A LI by the Da R. I., we form, I years, Purcha have primple.

Thi that I in the tainer Store used terial terest



A LL of the accompanying forms used by the purchasing department of the Davol Rubber Company, Providence, R. I., with the exception of the Container form, have been in use for a good many years, advises Ethel M. Smith, Assistant Purchasing Agent, who adds that they have proved very satisfactory and very simple to use.

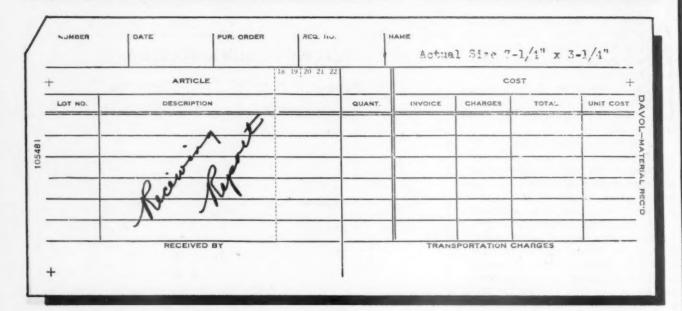
The form for keeping track of returnable containers was developed at the beginning of the war because of the increasing number of suppliers who requested return of drums. Miss Smith says that it has served its purpose well.

This lot of forms contains four types that have not heretofore been published in the Forms Forum, namely, the Container form, Return to Stock Voucher, a Storekeeper's Record card, and a form used for posting Cost Records for Material not stocked. Also, of special interest are the Purchase Order form—of

Porm 812 136 10-84 RETURN TO STOCK VOUCHER Date Returned 6/30/45 R. T. S. No. Our Order No. 7271 2494 John Blank Company Boston, Mass. Returned to: 500 pounds - Flour Article Reason Wrong grade 3¢ per pound Charge: Purchasing Dept. E. M. Smith

DAVOL	DAVOL	URCHASE ORDER RUBBER COMPANY ESTABLISHED 1874 IDENCE, RHODE ISLAND	ORDER NO. ON YOUR INVOICE	6510
	Actual Size 82" x	5.4		
ТО			DATE	
SHIPMENT TO BE MADE	SHIP VIA	PRICE F. O. B	REQ. NO.	DEPT. NO
1				
PLEASE SEND INVOICES IN		DAVOL	RUBBER COMPA	ANY

0



interest because of its utter simplicity and small size (5" x 8"); and the Requisition and Receiving forms. The latter two forms are on special stock used for I.B.M. forms, similar to a light Bristol, and are 7½" long x 3½" wide—printed lengthwise.

Assistant Purchasing Agent Smith supplied the following information on the procedure followed in the use of the forms:

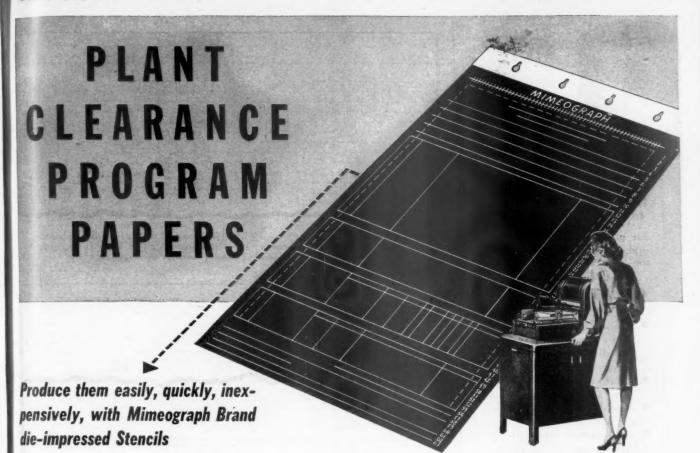
"A requisition is received from the storekeeper requesting the purchasing department to order material for stock. A purchase order in quadruplicate is written—one copy sent to the supplier, one to the storekeeper, one is for the purchasing department for permanent record, and one is for the inventory control clerk who is a member of the purchasing department. This last copy remains on file in the purchasing department until receipt of the material. From this copy entry of the order is made on the pur-

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							Mari			1	

This form is used by the Purchasing Department for posting cost of materials not

pen. die-

ASING



Here's a sound, sure method of handling one of the big paper-work problems of the moment. Ready to come to your desk right now, to tell you all about it, is our new booklet, "Mimeograph Brand die-impressed Stencils for the Production of Plant Clearance Program Papers."

It describes the routine procedure involved in the Plant Clearance Program. It shows you, step by step, how you can simplify the production of the required papers with Mimeograph\* duplication.

Mimeograph die-impressed stencils are used to produce both the required forms and the descriptions of the machine tools to be sold or transferred.

Rewriting of these descriptions is completely eliminated. Copy is permanent, black on white, and it's produced easily, quickly and inexpensively.

Mail the coupon below for your copy of this booklet. And if you haven't already done so, request too, our booklet, "The ABC of Contract Termination." It explains complete, practical methods for handling all the paper work involved ... illustrates sample forms.

A. B. DICK COMPANY, Chicago

## Mimeograph duplicator

A. B. DICK COMPANY, Dept. P-1045, 720 W. Jackson Blvd., Chicago 6.

Send me a free copy of the folder, "Mimeograph Brand die-impressed Stencils for the Production of Plant Clearance Program Papers."

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In Duplicating Quality
and Economy
For pre-eminently sharp, beautiful, economical duplicating,
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- Loose-end spindles a wide range of sizes to fit all makes of duplicators.
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EVERY OFFICE NEEDS A DUPLICATOR "PORTABLE"

The Compact, Inexpensive Versatile COLUMBIA NO. 1



Printing sheet surface up to 83%" x 13". Serves many of the functions of higher-priced machines. Contains Columbia "all-season" gelatine roll.

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Main Office & Factory: Glen Cove, L. I., N. Y.

NEW YORK KANSAS CITY, MO.

CHICAGO NASHVILLE MILWAUKEE

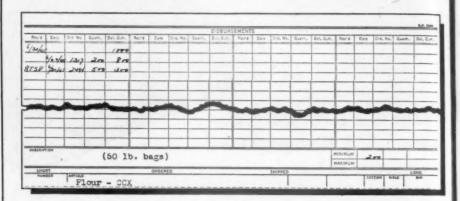
MINNEAPOLIS ATLANTA DETROIT

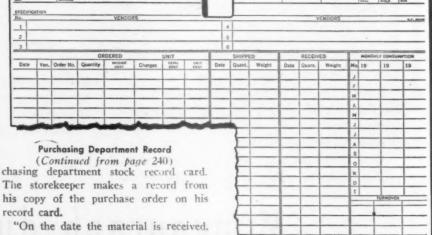
PHILADELPHIA PITTSBURGH

PORTLAND. ORE CINCINNATI

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				Actu	1 Size	8" x 5"						
									-			

Storekeeper's Record. As material is issued it is recorded on this form, and requisition is sent to Purchasing Department. Inventory clerk enters amount on Disbursements card (below) and enters price of material on requisition.





"On the date the material is received, the storekeeper fills out a receiving slip in duplicate, enters the amount received on his record card, and sends the original receiving slip to the Purchasing Department, keeping the duplicate on file in

"The inventory control clerk enters the receipt of the material on the purchase record card and the date received and balance on hand on the disbursements card. The Receiving Slip is then attached to the accounting department copy of the purchase order along with the original requisition and sent to the accounting department.

his department.

"This department enters the price from the invoice on both the receiving slip and the requisition. The requisition slip is sent to the cost department where a record is made of the material charged to the stores department and the requisition is permanently filed in this department.

"The receiving slip is returned to the purchasing department where a record is made on the *Purchase Record Card* of the cost of the material. The purchasing department copy of the purchase order is then filed in the "filled order" file and the receiving slip is filed for a period of one year.

(Continued on page 244)

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W HAT does your customer mean when he asks "How much?" You can be sure it's more than how much you get for your product or service. What he's most interested in is how much he gets for his money.

Finding the right answer to the customer's "How much?" is a No. 1 postwar problem, whether you are producing or selling goods or services. Ways must be found to furnish more for less—if you are to compete profitably with others and do your share toward achieving full employment.

That's our problem, too. When you ask "How much?" we realize that our answer must prove that you can achieve even greater savings in your business now through the use of Standard Register systems of written records.

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And as we give you more for your postwar dollar, we will be helping you give your customers more. For better systems are better tools of modern management, doing a better job of controlling every operation of business, eliminating waste and unnecessary costs.

See for yourself how well Standard Register answers your "How much?". Phone your local Standard Register representative, today. Ask him to tell you how the specialized, exclusive, proven techniques and tools he employs insure you the greater values in Standard's systems: effective control of your business and simplification of your paper work.

If you are not taking full advantage of the facilities Standard now offers for detailed, scientific analysis and improvement in the design, method of writing or control procedure of business form systems—investigate at once.



#### THE STANDARD REGISTER COMPANY

Manufacturer of Record Systems of Control for Business and Industry
DAYTON 1, OHIO

Pacific Coast: Sunset McKee-Standard Register Sales Co., Oakland, California. Canada: R. L. Crain, Limited, Ottawa. London: W. H. Smith & Son, Ltd.



Cancellation of war contracts, cutbacks, inventories, audits, taxes, Government reports . . all mean more paper work and an unprecedented demand for Ace Stapling Equipment. This efficient, speedy, time saving method securely fastens up to 40 sheets of average weight paper; preserves and keeps them intact; can be referred to easily, quickly; prevents misplacing valuable papers; and saves filing space. Ace Staplers are built with watchlike precision, from the finest materials, by skilled workmen.

SOLD THROUGH DEALERS EXCLUSIVELY

ACE FASTENER CORPORATION 3415 North Ashland Ave., Chicago 13, III.



Product Contain	•	Purchased from Return to Dept. No.										
Order No.	No. Items	lev. Date	Unit Deposit	Date Returned	No.	Date Credit	Date Returned	No.	Bate Credit	Date Returned	No.	Date Credit
							8					
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	110											
				177		-				1		
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Returned Container Record Form

(Continued from page 242)

"When it becomes necessary for one of the factory departments to order material from stock, they send a Requisition to the storekeeper, who issues the stock, enters the amount on his record card, and sends the requisition to the purchasing department. The inventory clerk enters the amount issued on the Disbursements Card and enters the price of the material on the requisition. The requisition is then sent to the cost department where the cost of the material is charged to the factory department requisitioning the stock and credited to the stores department. This slip is then permanently filed in the cost department.

"The Return Stock Voucher. Very often we have occasion to return material to the supplier because it contains foreign matter, is of a wrong grade, or for various other reasons. This Return to Stock Voucher was developed so that we could have a permanent record with the necessary information on all materials

"When material is to be returned, this form is made out in triplicate-one copy to the purchasing department, one to the storekeeper and one to the accounting department. The storekeeper returns the material as requested and subtracts the amount from his inventory card, and the purchasing department makes the entry on the disbursements card. The accounting department keeps its copy on file until a check is received or the material replaced."

#### Requisition and Purchase Order

Board of Public Utilities, Jamestown, N. Y.

E ARLE F. Brookins, Storekeeper, Board of Public Utilities, Jamestown, N. Y., writes that he has been regularly following the Forms Forum in

PURCHASING, for it supplies him with new ideas, ideas for revision of forms, and forms simplification.

(Continued on page 246)

SERVICE	OM REQUEST	DATE	NO.
ORDER FROM:	Actual Size 8-3/4" x 6"	DELIVER	Y REQUIRED
QUANTITY UNIT	DESCRIPTION AND SIZE	PRICE	W Q NQ ACCT.
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TO BE USED FOR:			
TO BE USED FOR:			



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KEELOX NEW PROCESS CARBON EACH SHEET TRADEMARKED

WE PRODUCED THE FIRST NON-GREASE CARBON WE PRODUCED THE FIRST SELF-INKING RIBBON

WE now give the world the wonderful complete line of New Process carbon paper, FOUR weights and SEVEN finishes in EACH weight in four brands. This carbon gives perfect, sharp, leg-

ible prints, extreme manifolding and wears like the proverbial IRON. This carbon greatly helps efficiency and simplifies purchasing, no office should be without it.

Please ask for samples from any of the Offices below

KEE DX MANUFACTURING CO., ROCHESTER 1, N. Y., U. S. A.

DOMESTIC BRANCHES: Atlanta, Baltimore, Birmingham, Boston, Chicago, Cincinnati, Cleveland, Dallas, Denver, Detroit, Houston, Indianapolis, Jacksonville, Kansas City, Los Angeles, Louisville, Memphis, Milwaukee, Minneapolis, New Orleans, New York, Omaha, Philadelphia, Pittsburgh, Portland (Oregon), Rochester (N. Y.), St. Louis, Salt Lake City, San Francisco, Seattle, Toledo, Tulsa.

FOREIGN BRANCHES: Buenos Aires, Cordoba, Rosario, Tucuman, Argentine; Adelaide, Brisbane, Melbourne, Perth, Sydney, Australia; Havana, Cuba. Carbon Paper Supply Co., London, Birmingham, Edinburgh, Glasgow, Manchester, Newcastle, Leeds, Leicester, Liverpool, England; and Belfast, Ireland. Export Dept. Rochester 1, N. Y., U. S. A. Cable Address: "Keelok Rochesterny."

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### Get the facts on this new business aid: PHOTOCOPYING!



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Now, with this handy unit right in your own office or plant, you can always have plenty of copies of anything whether written, typed, printed, drawn, or photographed—even if on both sides! Permanent, error-proof photocopies—at amazingly low cost! AFECO makes them at 1-a-minute speed—saves hours of drafting and typing—expedites everyone's work. No darkroom or technical knowledge needed-operate APECO. even a boy or girl can

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Here's the complete information you'll want to have on hand about this new miracle of office equipment—all in a convenient file folder. Shows the many uses of photocopying in every department—graphically illustrates the "why" and "how" of this amazingly simple procedure. It's yours for the asking—no strings attached. Send for this helpful file today.

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#### **BOARD OF PUBLIC UTILITIES** JAMESTOWN, NEW YORK MUNICIPAL ELECTRIC SYSTEM PURCHASE DATE REON, NO SHIP AT ONCE TO ELECTRIC DIVISION, SD. PUBLIC UTILITIES. JAMESTOWN, N. Y. BOARD OF PUBLIC UTILITIES SUPSBINTENDENT NENT MUST EXECUTE THIS AFFIDAVIT AND ATTACH IT TO THREE COPIES OF THE INVOICE. State of City of ... of the firm of ted bill, account or claim, amounting to \$ CITY OF JAMESTOWN; that the ite reasonable; that no set-off exists, or pay h bill, account or claim; that said bill, account .19 day of tary Public Discount offered will be considered applicable if payment of attached invoice is made on or bef Time in connection with discount offered will be computed from the date of delivery at destina-

(Continued from page 244)

Mr. Brookins submits the accompanying Requisition and Purchase Order forms used in connection with the operation, maintenance and repair needs of the Jamestown municipally owned electric and water plant, and the following explanation of their use.

"The Requisition or "Storeroom Request" is made out by department heads when material is to be purchased from out of town vendors. It is also made out for local purchases when the cost places the material in the capital expenditure class. The blank space in the center of the top of the form is used by the storekeeper for placement of order number and date of order.

"Purchase Order. This is made in five copies. The first is white and is sent to the vendor. The second copy is on yellow stock and goes to the accounting office. The third copy is blue and the fourth is pink and remain in the Storekeeper's office. The fifth copy, (on white paper ) has heretofore been used as the Priority file copy, but under the postwar conditions it will be given to the department head ordering the material.

"The blue copy is filed numerically in the storekeeper's office, and the pink copy

(Continued on page 248)

## isible Record

**Easy** Quick Plexible Durable Portable Compact

Use Cards only. Join together. File sheets of Cards on edge in correspondence folders -Half inch visible margin. Send order. 500 Blank Cards 6x4 inch \$3.45-10x4 \$5.30 500 Printed Cards 6x4 inch \$6.70-10x4 \$8.50 Use Visible Indexing, Color Signaling, Visible Low Cost Tabulation of vital information. Ten years Convenient national use. Send no money. Satisfaction Guaranteed. **Write for Catalog** 

25 Card-Sheets Show FACTS on 500 Cards

Stock Ruled Credit Payroll Prospects Collection



Ross-Gould Co., 303 N. Tenth ST. LOUIS



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Cost

Sales

Stock Ruled Credit

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LINKED closely to the precision jobs coming off the boards are the tools that assure accuracy of detail. One of these is the seemingly small pencil which looms large in the mind of a craftsman, as an important instrument of accuracy.

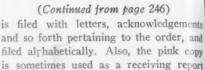
VENUS Drawing Pencils are engineered to give you drafting perfection without failure: accurately graded to assure uniformity in all 17 degrees ... strong in performance ... smooth and clean in action.

Put VENUS to the test on your drawing board. Send us a postcard or a note for two free samples, Specify degrees wanted.

## VENUS

DRAWING PENCILS

AMERICAN LEAD PENCIL COMPANY, HOBOKEN, NEW JERSEY



and is returned to the storekeeper by the accounting department. In most instances, the packing slip is used as a receiving

report.

"The first white copy, vendor's copy, is featured by a perforated margin on the left hand side. When the order is written, the account number to which the material is to be charged is entered in this margin. Before the copy is mailed to the vendor, this margin of course is removed.

"Attached to the bottom of the order is the form of affidavit which under the law must be attached to the invoice. The reverse side carries the terms under which the order is placed. On the rest of the copies at the bottom of each sheet. information is shown as to vendor's order number, date of acknowledgment, and shipping promises.

"The whole Purchase Order is very simple. It may prove interesting to others operating under conditions such as ours."

#### LOOK FOR \$10,000,000 METAL OFFICE FURNITURE PRODUCTION

With the revocation of the order controlling the use of steel in production of furniture and fixtures (L-13-b), the military cutback of 99 per cent of its steel procurement, and the abolition of the ceiling on steel use, the metal furniture industry is now free to proceed with full-scale reconversion. Limited reconversion had begun in this industry during the third quarter after amendments were adopted to relax the control, which as originally issued had virtually shut down the industry.

It is difficult for WPB to estimate the rate of reconversion in this industry, as a large number of manufacturers making a great diversity of products are involved. Furthermore, the rate of pick-up in all reconverting industries will vary with the degree of speed with which the different plants can clear out the machinery with which they made war equipment, and the war work in progress, get deliveries of the materials for their peacetime products, and then start their reconversion wheels moving.

However, about \$10,000,000 worth of metal office furniture, including shelving, lockers, safes and filing equipment, and another \$10,000,000 worth of household metal furniture, including tables, chairs and kitchen cabinets, should be made in the fourth quarter. This production would appear in the same quantity in retail stores in the first quarter of 1946.

Pre-war production in this industry amounted to about \$200,000,000 annually. During the war years the metal furniture industry was engaged in making a wide spread of war equipment, ranging from aircraft sub assemblies to radar cabinets.



They, too, should be subject to this sound and simple rule If they're Worth Keeping, keep them on

### Weston paper

Weston Cotton Fibre Content Record, Ledger, Index and Bond Papers are specifically and exclusively created and tested to provide an efficient and enduring foundation for records worth keeping. For your own protection and peace of mind and for the sake of the succeeding generations that will carry on your business, make sure that your important records are put on WESTON paper.

BYRON WESTON COMPANY Dalton, Massachusetts

Weston Makers of Papers for Business Records



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..which typewriter?

These stroboscopic flash images prove that no human fingers can ever match the top speed of the SMITH-CORONA. Taken at 1/60,000 of a second, you will notice the clear, sharp movement of type-bars and carriage; while the hands of the speed typist appear blurred beyond recognition. If it's professional championship speed you want-or just everyday office speed...the SMITH-CORONA has it . . . to spare



Limited quantities now available.

Smith-Corona Grotons



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## COMMERCIAL FORMS AND SYSTEMS



An ally of modern management, Reynolds and Reynolds is one of the world's largest suppliers of printed or lithographed control and operational forms.

- · CARBON INTERLEAVED SYSTEMS
- . BUSINESS MACHINE FORMS
- PAYROLL CHECKS and SYSTEMS

Effective Advertising
Literature, Distinctive
Stationery and Business
Forms of every kind

REYNOLDS
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COMPANY • DAYTON 7, OHIO

SALES OFFICES IN

Established 1866

#### Oppose Use Of Paper Priorities

Hold Paperboard Conservation Order Sufficient

Members of the Over-all Paper Industry Advisory Committee went on record as being opposed to the use of priorities on paper, paperboard and paper products in the belief that the War Production Board Paper Division can continue handling the situation satisfactorily under the controls of the Paper and Paperboard Conservation Order (M-241), WPB announces.

The committee also decided that the continuation, modification or revocation of the Paper and Paperboard Simplification and Standardization Order (L-120) should be left to the best judgment of the WPB Paper Division. This attitude was expressed after a lengthy discussion of the advantages and disadvantages of any change in the present order, which limits specifications and weights of virtually all types of paper save wrapping

paper, as a wartime conservation measure. Pointing out that the paper manufacturing industry had operated during more than two years of war without the use of priorities and without compliance procedures, members of the committee recommended that action be taken to secure the exclusion of paper from provisions of PR-28, under which the new priority CC ratings designed to meet certain industrial and civilian emergencies are issued. The use of such priorities, members claimed, would not work equitably, in which case chaotic situations would result. The committee expressed the opinion that the directive powers of M-241, supplemented by industrial cooperation in meeting governmental and essential or emergency requirements, were adequate to meet all needs that would arise.

WPB officials said that in any event both military requirements and civilian essential or emergency requirements would have to be met by the industry voluntarily or by special directions from the Government.

#### Not "Out of the Woods"

Expressing his thanks to the paper industry for its cooperation, Benton R. Cancell, director of WPB's Forest Products Bureau, said the industry itself would soon have to take over and follow the path to free private enterprise and full employment if a speedy transition and conversion were to be affected. He added, however, that the industry was literally not yet out of the woods because of the expected loss of prisoner-of-war woodcutters and the delay in getting skilled civilian woodcutters back into the woods. The necessity of caring for and conserving our forests was also emphasized.

Asserting that paper and paper products would soon reach the highest standards ever known, Rex Hovey, former director of the Paper Division, said that the United States was using about 300 pounds of paper per capita, the highest rate in world consumption. He added

that continuing and new needs had to be met because paper will play a vital part in social and economic future developments. To this end, he emphasized the desirability of continuing the col-lection and compilation of all available data. He further emphasized the necessity of mechanizing and modernizing all segments of the pulpwood, pulp and paper industry. Establishment of a comprehensive pulpwood procurement industry and adequate statistics therefrom would avoid reliance on periodic wood cutting by independent farmers, Mr. Hovey said. Government officials said that steps for the continued collection of facts and figures on the industry were being taken to insure adequate future statistics.

#### TO RETAIN RESERVE REQUIREMENTS IN RAG CONTENT PAPER FIELD

To insure a maximum production of paper and paperboard, especially during the period of reconversion, restrictions on the use of idle paper machines have been removed by the War Production Board,

This was effected by an amendment to paper and paperboard conservation order (M-241), which has not been revoked but amended to conform with today's changed conditions, officials of WPB's Paper Division pointed out.

Current paper requirements of the military and governmental bureaus make it necessary to retain the existing reserve production requirements of Order M-241 in the rag-content paper field Mills producing these grades of paper must continue to maintain a reserve production of 35 per cent of each mill's monthly production to insure adequate tonnage of these papers for Government use. Included in this field are a considerable number of bond, currency, writing, manifold and index grades of paper. WPB said.

Although the war is over, the Army, Navy and certain Federal agencies still require large quantities of several types of paner.

Men in the services still require what are called "household papers", including toilet tissue and towels, as well as books, magazines and newspapers. Although many military packaging and shipping requirements have been materially reduced because ordnance and ammunition no longer have to be shipped, the soldiers and sailors have to be fed and maintained, and food packaging is still a major paper and paperboard requirement.

To take care of these demands, Order M-241 now requires that each paper and paperboard manufacturer reserve 20 per cent of his monthly production of all types of paper other than the rag content fine papers. This 20 per cent reserve replaces the figure of 35 per cent, which

(Continued on page 252)

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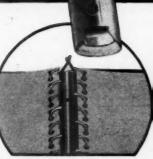
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g content reserve t, which INTRODUCING "NUMER-RING" with all the advantages of ring binding . . . plus new economy and new features.

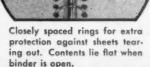
Here is a new type of loose leaf binding with closely spaced rings for extra protection against sheets tearing out. It is strong, but light in weight . . . opens, closes, and handles easily . . . grips and holds sheets of all kinds securely. Great for today's thin paper!

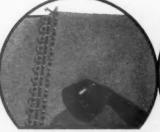
The applications of "NUMER-RING" in days to come will be many and varied . . . catalogs, price lists, data books, manuals, visible, ringbooks, pay-roll books, and a host of others. Meanwhile it is becoming available in stock covers and can be "tailor-made" in an assortment of styles and materials to meet your specifications.

ASK YOUR STATIONER



Staggered rings make sheets without friction and simplify insertions. Equipped with an easy-opening device.





Neat in appearance - light in weight. Price comparable to least expensive loose leaf mechanisms.



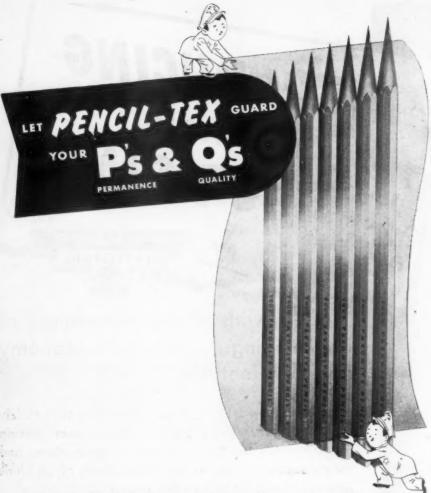
Ring arrangement allows sheets to be assembled with visible margins. Light gauge rings with accurately matched joints.

NATIONAL BLANK BOOK COMPANY

HOLYOKE, MASSACHUSETTS

NEW YORK

SAN FRANCISCO



Pencil drawings on Penciltex provide all of the permanence of the best tracing cloth—all of the permanence plus the additional protection of a moisture resistant surface.

The quality of a Penciltex drawing is best demonstrated by the sharpness and clarity of the prints. Only Penciltex drawings have the contrast so vital for easy-to-read prints.

Let Penciltex guard your P's & Q's the permanence and quality of your engineering drawings.

#### The Frederick Post Company

3650 AVONDALE AVE. . CHICAGO 18, ILLINOIS

DETROIT . HOUSTON . CHICAGO . LOS ANGELES . MILWAUKEE

INSTRUMENTS . EQUIPMENT . BLUE PRINT PAPERS . KINDRED SENSITIZED PRODUCTS



(Continued from page 250)
was formerly applicable to many of the

printing and wrapping grades of paper.

Other amendments impose inventory controls formerly included in the provisions of several recently revoked quota restriction orders.

Another amendment removes the 10 days advance notice of changes in required reserve production percentages which may be called for now by WPB if found necessary without a waiting period.

#### VIBRATION MOUNT HANDLES LOADS AS LOW AS ONE POUND

A new light-duty vibration mount, just announced by Hamilton Kent Manufacturing Company, Kent, Ohio, will handle loads as low as one pound.

Light-duty Rexon mounts are designed to eliminate disturbing vibration and noise from small motors, typewriters, business machines, household appliances, small power tools, etc., or to isolate delicate



Handles Loads 1 to 200 Pounds

instruments, tables, desks, etc. from external vibration.

The principal of mount design, a radical departure from conventional practice, combines the high vibration dampening properties of rubber loaded-inshear, with the safety, durability and ease of installation of a simple compression mount. With the average shear mount, loads must be carefully calculated as any overload may seriously damage the mount. With Rexon mounts no overloading of the shear elements is possible which makes specification of the proper mount simple.

Five sizes of light-duty Rexon mounts will handle a range of loads from one lb. to 200 lbs. The heavy-duty Rexon mounts handle loads up to practically any weight.

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### INCREASE IN CANADIAN PULPWOOD FOR 1945

Canadian pulpwood available to United States mills for importation during 1945 will total 1,800,000 cords, members of the Canadian Pulpwood Industry Advisory Committee were told at a recent meeting. This represents an increase of 550,000 cords over the base quota of 1,250,000 cords, all of which will go into pulp and paper products for military and essential civilian use, the war agency said.

The total represents an increase over the 1944 allotment of Canadian wood of 295,000 cords, and when delivered will provide approximately 11 per cent of the

(Continued on page 254)

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CRANE'S FINE PAPERS MADE IN DALTON, MASSACHUSETTS .

SINCE 1801

UCTO:





CHICAGO, ILL.
H. Rabin, 30 No. LaSalle St.
LOS ANGELES, CAL.
A. B. Beyd Co., 763 E. 14th St. PETERSBURG, VA. Wm. A Bragg, 224 No. Sycamore St. PORTLAND, ORE.

B. Boyd Co., S. E. Union & Morrison
SAN FRANCISCO, CAL.

A. B. Boyd Co., 1235 Howard St. SEATTLE, WASH.

8. Boyd Co., 494 Dester Ave.
ST. LOUIS, MO.
C. E. Wilkins, 1692 Lecust 59.
WALLASTON, MASS.
S. B. Scott, 123 Elim St CAPE TOWN, S. A. n Agency Co., 12 Plain St.

#### COATING LAMINATING QUICK SERVICE

ADHESIVE and chemical mix coatings expertly applied to paper, cloth, foils and other materials.

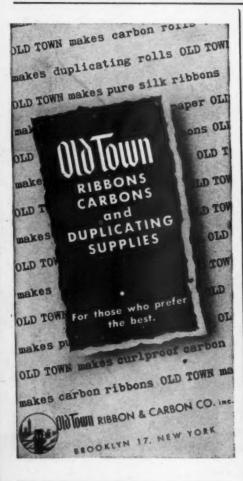
Fabrics backed, laminated or combined to your specifications, and special purpose formulas developed in our own Laboratory.

65 years of "Know-How" deliver "Use-Proved" tapes and backings deserving the enthusiastic approval they earn on the production lines.

Just tell us what your problem is and let our Laboratory, backed by their years of specialized experience in synthetics, help you find the perfect solution.

Let Mr. George L. Peters, E.M., Columbia 1911, head of our Engineering Staff, suggest from our formulas those experience indicates as best suited to your particular

eters Bros. Brooklyn, N.Y. ESTABLISHED 3 GENERATIONS





(Continued from page 252) entire United States pulpwood consump-

Adherence to historical patterns in the shipment of this pulpwood from the wood-producing provinces of Canada to United States mills will be insisted upon by Canadian timber control authorities, WPB officials said. Thus, mills can import only from those areas in which they have normally and historically operated.

WPB said that the additional pulpwood will be generally distributed among those United States mills now owning wood already produced and ready for shipment from Canada. Fewer freight cars may be available for the movement of this wood during the remainder of 1945 than were available last year, but every effort will be made to get United States-owned wood from Canadian forests, members were informed.

Individual mill shipments from Canada to the United States will be reviewed in the early fall, and the transportation situation then prevalent at each mill will determine its final share of supplemental pulpwood, WPB said.

Members present at the meeting were: F. C. Ash, Oswego Falls Corp., Fulton, N. Y.; William T. Brust, Hammermill Paper Co., Erie, Pa : P. W. Churchill, Brown Co., Berlin, N. H. : A. B. Hansen, Northern Paper Mills Co., Green Bay. Wis.; Francis Kiefer. Sulphite & Paper Co., Port Huron, Mich.; George E. Moore, Sulphite & Paper Co., Mt. Tom. Mass.; Frank E. Pearson, Jr., Great Northern Paper Co., Bangor, Maine.

#### NEWSPAPER LIMITATION ORDER INCLUDES ALL NEWSPRINT USERS

To insure an equitable distribution of newsprint, still in short supply, the War Production Board issued an amendment to its Newspaper Limitation Order (LO240) extending the control under that order to include all users of newsprint. In doing so, consumption quotas of newsprint were established for users other than newspaper publishers, generally equivalent to their rate of consumption permitted under their respective orders at the time of their revocation August 24. 1945, WPB Printing and Publishing Officials said.

Heretofore, Order L-240 applied only to newspapers. All restrictions on newspapers remain in effect except that small newspaper publishers are now permitted to use five more tons per quarter than was previously allowed. The orders controlling the use of all grades of paper by the other printing and publishing industries which were revoked on August 24, 1945, were L-241 (Commercial Printing and Duplicating), L-244 (Magazines and Periodicals), L-245, (Books and (Wallpaper), L-294 Booklets), L-177 (Displays), L-289 (Greeting Cards and Illustrated Post Cards) and L-340 (Government Commercial Printing and Duplicating)

The industries that were controlled by these seven orders use chiefly book, groundwood printing and fine papers.

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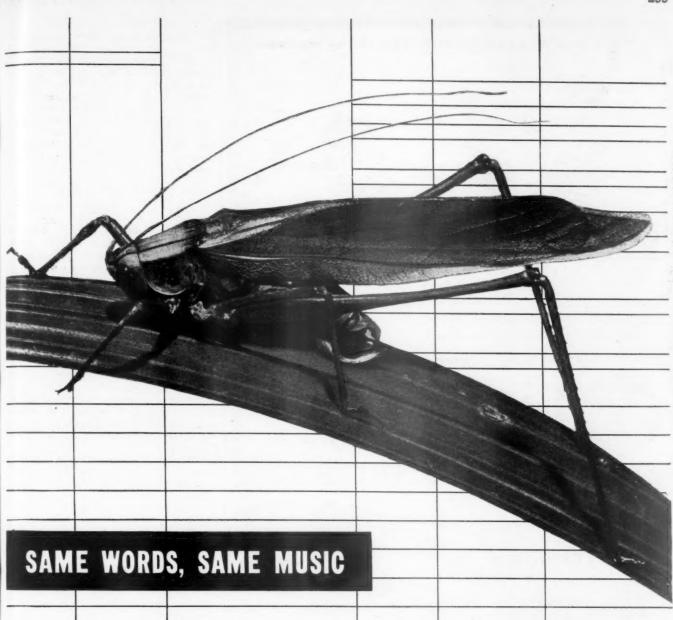
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WHAT's that again that again that again, please?

Repetition.

40,000,000 times every season the katydid rasps the same rasp. Thousands of times every day in every office the same typewriter keys fall, the same columns add up, the same entries march by.

And the same mistakes happen.

In firm after firm, the pattern of error is repeated. Too many forms.

Too many words. Lost motion. Economies in printing overlooked. Paper wasted. Time spent getting forms ready exceeding time spent filling out forms.

Moore looks upon your entire system with the eye of common sense. Moore sifts, analyzes; combines forms and doubles them up; recommends changes; then prints, in quantities of hundreds or many millions.

The ten companies listed below,

long under Moore ownership, have now united under the Moore name. There is no change in ownership, management, or policy. But facilities for serving any business, anywhere, are greater than ever.

Ask that a Moore specialist come see you. There is no charge whatever for consultation. Get in touch with the nearest Moore division, as listed below, or the local office. The outcome may be thousands of dollars saved.

AMERICAN SALES BOOK CO., INC., NIAGARA FALLS; ELMIRA, N. Y.
PACIFIC MANIFOLDING BOOK CO., INC., EMERYVILLE; LOS ANGELES, CALIF.
GILMAN FANFOLD CORP., NIAGARA FALLS, N. Y.
COSBY-WIRTH MANIFOLD BOOK CO., MINNEAPOLIS, MINN.,
MOORE RESEARCH & SERVICE CO., INC., NIAGARA FALLS, N. Y.
SOUTHERN BUSINESS SYSTEMS, INC., ORLANDO, FLA.
MOORE BUSINESS FORMS, INC. (New Southern Div.), DALLAS, TEX.; ATLANTA, GA.
In Canada—Moore Business Forms, Ltd., succeeding Burt Business Forms, Ltd., Terorts,
Western Sales Book Co., Ltd., Winnipeg and Vancouver;
National Sales Check Book Co., Ltd., Mentreal

MOORE BUSINESS FORMS, INC.

ADV. HT N. W. AYE

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These orders were revoked because of the increased supplies of these papers due to the importation of pulp from Sweden and decreases in military and foreign requirements. However, the circumstances resulting in the additional supplies of these papers did not affect the short supply of newsprint, which comes chiefly from Canada. The shortage of newsprint makes it necessary that other industries be limited in the amount of newsprint they may use.

#### Define Newsprint

"Newsprint", as defined in the amended order L-240, means the grades of paper commonly known as "standard newsprint" and "superstandard newsprint". The restrictions on persons other than newspaper publishers do not apply to other grades of groundwood paper such as "novel news" and "bulking news".

Under the amended order, book and magazine publishers and commercial printers may use in any calendar quarter up to 113.3 per cent of the amount of newsprint that they lawfully used in the corresponding calendar quarter of 1944 or the second calendar quarter of 1945 or 10 tons, whichever is greatest. Publishers of shopping guides, free distribution newspapers, "want ad" publications and free distribution publications in newspaper format may use in any calendar quarter up to 105 per cent of the amount of newsprint that they consumed in the comparable quarter of 1944 or the second calendar quarter of 1945 or 10 tons, whichever is greatest.

Newsprint delivery quotas are also established under the amended order L-240 for persons other than newspaper publishers, to conform generally with continued delivery restrictions on newspapers. These delivery quotas provide that no person other than a newspaper publisher may order or accept newsprint in any calendar quarter in excess of his consumption quota in that quarter. Further, he must so regulate his acceptances of newsprint that his inventory on October 1, 1945, will not be more than 45 per cent of the newsprint that he lawfully used in the preceding quarter or

60 tons, whichever is greater.

#### NEW TYPE STAMPING INK

The Louis Melind Company of Chicago has recently put on the market a new type of stamping ink called SLINK. It was developed especially for marking slick plastic surfaces, the kind requiring an ink that really "sticks." SLINK is also suitable for use on cellophane, waxed paper, glazed paper, metal, and glass. Being heat and weather resistant, it is ideal for marking frozen food containers, tin cans and glass bottles. Its quick-drying qualities permit production-line marking without danger of smearing. SLINK is the latest type of ink to come from the Louis Melind Company laboratories, which specialize in industrial inks of all kinds. SLINK is available in black, white, blue, green, purple and red.

When you want to KNOW...go to an expert?



Your best cue to the best in printing papers is to check with your printer! He knows quality . . . he has to! His own reputation depends on it! In technical papers, too, you'll find that Rising is synonymous with the best. Rising Paper Company, Housatonic, Mass.

Ask your printer...he KNOWS paper!



# **Rising Papers**

PRINTING AND TECHNICAL

WASTE PAPER IS STILL ESSENTIAL...KEEP SAVING IT!

# LOW PRICED STATIONERY

SPECIALS TO CELEBRATE OUR

#### 25th ANNIVERSARY

Pengad 2% center Fasteners, per M \$ Acco All-Metal Fasteners, per M	
	.60
Standard Staples, 5M to Box, per box	
Paper Clips, No. 1, 100 to Box, per M	.45
Popular 5¢ Pencils, per gross	3.80
Laslong No. 2 Pencils with erasers, per	
gross	2.25
Popular size Rubber Bands, per 1b	.80
Rubber Cement, AA quality, per gallon	2.25
Colored Peneils, 10¢ popular brands,	2.20
Colored renems, 10¢ popular brands,	c 00
per gross	6.00
Pencil Erasers, per lb	.45
Soap Erasers, 5¢ sellers, per doz	.35
Cellophane Tape 1/2x1296, first quality,	
per roll	.42
Bond Seratch Pads, 3x5, per M	9.50
Bond Scratch Pads, 4x6, per M	15.00
Ruled Bond Pads, 81/2x11, per doz	.75
Plain Pand Pade 91/211 man don	
Plain Bond Pads, 81/2x11, per doz	.70
2-oz. bottles Popular Ink, per doz	.66
Adding Machine Rolls, 2-5/16", per	
100	7.50
Mimeograph Paper, 81/2x11, per ream	.48
Onion Skin Paper, 81/2x11, 25% rag,	
per ream	.90
All-Metal Stapler, Popular Brand	1.15
Pressboard Covers, 9x12, per doz	2.40

PENGAD

and hundreds of other stationery items

Write for Price List No. 103

Established 1920
Pengad Bldg., Bayonne, N.J.



Industry today, more than ever before, is using Personnel Service, Safety and Sales Incentive awards because employees RESPOND favorably to them. Stimulate better employer-employee relations in your plant by the use of Morgan's awards. Prices depend on design and quantity involved. We will gladly design your own individual award to your specifications, in sketch form as shown above, at no obligation. Write for illustrated folder.

#### MORGAN'S, INC.

Manufacturing Jewelers

32 W. RANDOLPH ST. Dept. P CHICAGO 1, ILL.

Aniqually.

the name "Tension" meant envelopes with patented button and string fasteners, (Tension Tie) which keeps contents under tension—thus better protected in the mail.

Today

Tension means better envelopes for every business need



CORRESPONDENCE
WINDOW
POSTAGE SAVER
CATALOG
TENSION TIE
METAL CLASP
EXPANSION
DUO-POST
BOOKLET
RETURN
FLAT MAILING
PACKAGING

## TENSION ENVELOPE CORP.

New York 14, N. Y. 345 Hudson St. St. Louis 3, Mo.\* 23rd & Locust

6

Minneapolis 15, Minn.\* 500 South 5th St. Des Maines 14, lowa\*

Kansas City 8, Mo."
19th & Campbell Sts.

\* ORIGINALLY BERKOWITZ ENVELOPE CO

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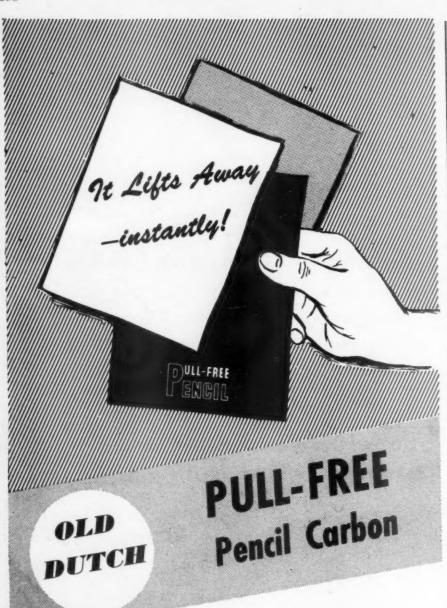
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You don't have to tussle with this pencil carbon. It yields at a touch. Use as sharp a pencil as you wish. Bear down as hard as you like. Then finger the carbon and see it come free—quickly, cleanly.

Old Dutch PULL-FREE Pencil Carbon is specially processed to prevent clinging and sticking. . . . One more feature highlighting the better quality that has characterized Old Dutch products for nearly 50 years.

Ask Your Old Dutch Customer Engineer

#### **WATERS & WATERS BRANCH**

511 Locust St., St. Louis

Burlington, N. J.

San Francisco, Cal.

#### GOULD PAPER CO. ACQUIRED BY CONTINENTAL CAN

Continental Can Company has acquired the stock of the Gould Paper Company of Lyon Falls, New York, manufacturers of ground wood specialties.

In announcing this acquisition, Carle C. Conway, chairman of the board and president, pointed out that these new properties, which include plants and natural resources, will permit Continental to expand its operations in both paper and plastics. He referred particularly to newly developed methods for the preparation of high-grade pulps for paper specialties, and to plans for developing and expanding the company's manufacture of plastics products.

The Gould Paper Company has been under the direction of the Gould family since 1892, when it was founded by G. H. P. Gould, a pioneer in the development of the paper industry in New York State.

The properties consist of extensive timber holdings of Adirondack spruce and hard woods, and include large developed and undeveloped water power. The Moose and Black Rivers amply supply the large quantities of water required daily for mill operations. During high water they also carry cut pulp wood to the main mill located at the junction of the two rivers.

The principal properties are completely integrated from an manufacturing standpoint. They include sulphite and ground wood plants, with a three-machine paper mill at Lyons Falls, a one-machine paper mill at Port Leydon, and four separate ground wood mills located at various falls on the Moose River, which take advantage of part of the already developed water power.

Continental Can Company will continue these operations under the name of the Gould Paper Company, and will manufacture, sell and expand the grades of ground wood specialties now being produced. R. W. Shaver will continue as vice president and general manager, with complete responsibility for over-all operations, and other personnel will be retained.

### 1 1 1 ELIMINATES STATIC ELECTRICITY

One of the factors contributing to "Offset" is static electricity. Whenever there is a tendency for sheets of paper to stick together when partially or entirely ejected from Duplicator—static charges are present. Obviously, anything which causes close adherence of individual sheets of duplicated material makes it easier for wet ink to transfer from one sheet to another.

Static electricity—usually generated by friction, especially so in cold dry weather—can be effectively drawn off or grounded by means of a Multigraph accessory which consists of tinsel wound on a flexible wire. This in turn, is grounded to frame of maohine. To be effective, however, the tinsel must be in good condition or "fuzzy" so that paper being ejected can make good contact. Tinsel which lacks a "fuzzy" appearance is not in good condition and should be replaced.

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Peter Piper worked in an office and had charge of buying paper ... business papers for letterheads, envelopes, forms, and the office duplicating machines.

With a short-sighted eye for "bargains", Peter was more price-conscious than brand-conscious with the result that the qualities of the papers that he picked were consistently inconsistent.

How much better it is to standardize on a broad, accepted line of better business papers ... a line that insures uniform quality and consistent satisfaction with every batch you buy. Such a line is the Atlantic line ... fine business papers for better results.

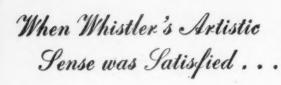
Adlantic Bond

MADE BY
EASTERN CORPORATION
BANGOR, MAINE

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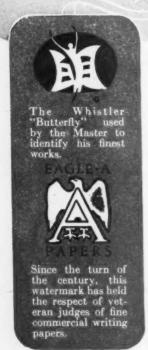
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#### . . . He added the "Butterfly"

Collectors of the drawings and etchings of James McNeill Whistler especially prize those which bear his famous "Butterfly" signature. This mark authenticates his more mature and sensitive works. For the same reason we mark . . .

#### EAGLE-A AGAWAM BOND

100% Cotton Content

with a watermark that has won the confidence and respect of buyers of paper for business and legal use.

New cotton fibre — used in making Eagle-A Agawam Bond — gives it the crisp, impeccable look of the top-flight salesman — gives it the quality, texture and durability to permanently record vital business messages.

Specify Eagle-A Bond to your printer, lithographer or engraver.

Ask your stationer for EAGLE-A COUPON BOND BOXED TYPEWRITER PAPER

# **EAGLE-A PAPERS**

AMERICAN WRITING PAPER CORPORATION . HOLYOKE MASSACHUSETTS

#### M. E. CODY HEADS PAPER PRICE BRANCH OPA

M. E. Cody has been appointed price executive of the Paper and Paper Products Price Branch, succeeding J. R. Atwater, who has resigned to return to private industry, the Office of Price Administration announces.

Mr. Cody, a businessman associated with the paper industry all his life, served with the War Production Board since August 1943 as assistant to the director of the paperboard division.

Prior to joining WPB, Mr. Cody was for three years resident manager of the Savannah, Ga., plant of the Union Bag and Paper Corp. From 1928 to 1939 he was general manager of the Bogalusa Paper Corp., Bogalusa, La. From 1924 to 1928 he was manager of the Tennessee Extract Corp., Nashville, Tenn., and from 1922 to 1924 he was resident manager of the National Paper Products Co., Stockton, Calif.

#### NEW BOOKLET ON ADHESIVES

A new 12-page booklet, "3-M Adhesives in Industry," which should be interesting and helpful to users of adhesives, sealers, coating or insulating compounds, impregnators and sound-deadeners, has just been announced by the Minnesota Mining & Manufacturing Company, St. Paul 6, Minn.

Paul 6, Minn.

The booklet illustrates and describes adhesive operations in many different industries, methods of application and a listing of the physical properties.

It lists various formulae and shows the viscosity, bonding range, color, weight, characteristics and uses and Government specifications. Each booklet contains an adhesive project sheet for the analysis of any adhesive problem.

#### EVERSHARP PLANS NEW PLANT TO MAKE BALL CONTACT WRITING INSTRUMENT

Expansion plans looking to production of the new Eversharp ball-contact writing instrument this year will provide new employment for more than 1,000 persons and additional factory space to accommodate them, according to announcement today of Martin L. Straus II. president of Eversharp.

II, president of Eversharp.
Eversharp employs 2,500 men and women in its present plants, which already are changed over to peace-time production. Plans for production of the new ball-bearing writing instrument are in addition to its program of production of Eversharp pens and pencils.

The additional factory for the production of the new ball-bearing writing instrument, which rolls the ink onto the paper dry instead of inscribing it on wet with a pen point, will be located in the East, within the 100 mile radius of New York. The plant will be in production the latter part of this year and will employ more than 1,000 men and women at the beginning and more later.

Eversharp announced this revolution-

(Continued on page 262)

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....SPEED

is their middle name!

Each is a champ on its
own... But for the greatest stapling performance you've
ever known—put them to work as a team!
When your office is equipped with the most
satisfactory staplers made, be sure it has the advantage of the best staples obtainable—SWINGLINE Speed
STAPLES sold only in the original Red. White and Blue box!

Swingling

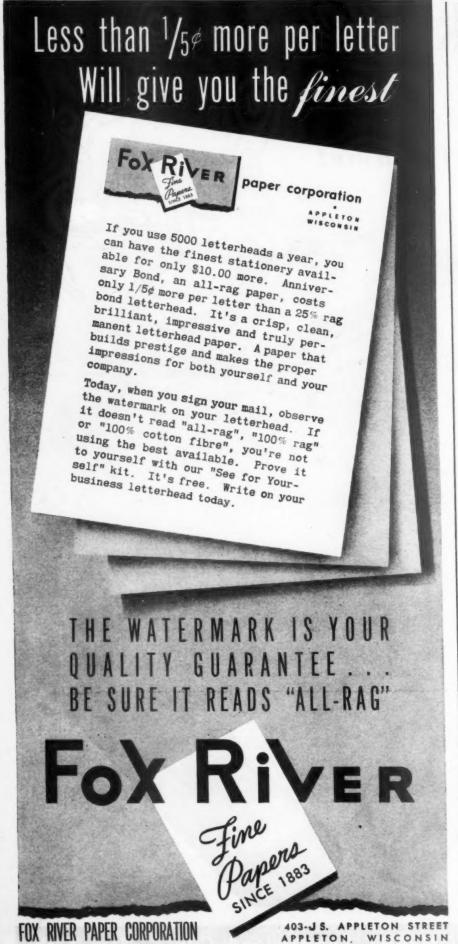
SPEED STAPLES

Standard-size SWINGLINE Speed STAPLES are precision-made and 100% Round Wire instead of flat ... This means easier penetration, neater stapling ... Also means that they're free from the film of excess glue which forms on strips of flat staples and causes clogging ... Uniform in every respect—and full count guaranteed!

SPEED STAPLERS

The famous SWINGLINE STA-PLERS are easiest to operate. simplest to load . . . The only machines with staple mouth opening wide, free and clear . . . Guaranteed trouble-proof!

SPEED PRODUCTS COMPANY, Long Island City 1, New York



BOND, LEDGER, ONION SKIN - IN 25-50-75 AND 100% RAG CONTENT

#### (Continued from page 260)

ary writing development early this summer. The new writing instrument, which is neither pen nor pencil, uses a miniature ball-bearing as its writing contact and a new process viscous ink. It writes on glossy paper, soft paper, blotting paper or cloth without spreading. The ink, being rolled onto the paper or other material, dries as soon as it contacts the writing surface.

#### CASH BOX WITH TRAY

Specially designed for high utility, the new C-47 and C-47-T (with tray) cash box manufactured by Pioneer Steel Company, 311 W. Ave. 33, has several special features.

The recessed handle arrangement on the top of the cash box facilitates easy storage into drawer or cabinet. An ingeniously designed compartmented tray which can be adjusted to accommodate



New Pioneer Cash Bax

any size bill, receipt, stamp or change, meets the demand for an all-purpose cash box.

A real tumbler lock recessed into top of box eliminates the ordinary old-style cut-out tray and permits full utilization of the box capacity. All locks are furnished with milled brass keys and the chance of key duplication is practically nil, inasmuch as Pioneer Tumbler Locks have over 2,000 key changes.

Manufactured of high-grade, heavy gauge steel throughout, the Pioneer C-47 and C-47-T cash box has long-wearing full length piano hinges for longer wear and added protection. As an added protection against pilfering, the box is so designed that prying on top simply tightens locking grip.

Finished in rich green baked enamel, the Pioneer box is available with or without tray—C-47 (without tray) and the C-47-T (with tray). Overall size of the box is: 10" x 7" x 4". Sectional tray size: (C-47-T only) 10 x 6½ x 13%.

#### 4 4 4 GOVERNMENT PUBLICATIONS

Series of pamphlets, describing the "Safe Handling of Chemicals", covering protective clothing, permissible concentrations, first aid, giving complete bibliography, is available on request from the Department of Labor at no cost.

To receive the first of the series on ammonia, and all other pamphlets in the series, send request to Robert J. Kennedy, Acting Chief, Safety and Health Section, Room 6320, Department of Labor, Washington 25, D. C.

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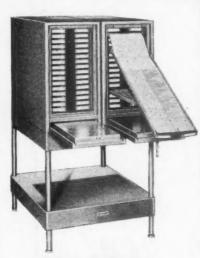
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# STEEL RETURNS!

... designed to complement today's improved record controls



ARISTOCRAT STEEL FILES for Long, Dependable Service



MODERN SAFE-KARDEX for Visible Administrative Control



SAFE-CABINET EQUIPMENT for Certified Fire Protection



STEEL LEDGER TRAYS
for Machine Posted Records



VISIBLE INDEXING EQUIPMENT for Fast, Accurate Reference



**DELIVERIES** of steel equipment necessarily follow the sequence in which orders are received. Under present conditions, prompt decision is suggested.

It's good business
to combine
Equipment VALUE
and
Methods ECONOMY!

War production experience taught us new facts about performance, structural strength, refinement of design...and we have put them all into new and improved steel office equipment, now in production!

This is the time to combine the long-term investment value of steel housing and record-protection with more efficient record-control methods. Many improved systems, especially

developed to speed production of war materials, can now be applied advantageously to increase peacetime operating efficiency.

Talk over your requirements with a Systems Technician. He can point out opportunities to economize with modern steel equipment, simplify administrative control and obtain important record-keeping savings.

Just call our nearest Branch Office.

SYSTEMS DIVISION

REMINGTON RAND

315 Fourth Avenue, New York 10, N. Y.

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# Time for a change?

Remember when you used to buy practically anything from anyone just because you could buy it? Those days have gone forever.

So maybe it's time for a change the next time you buy carbon papers or typewriter ribbons. Maybe it's time to put those words "quality" and "value" back into your buying vocabulary. If you do, you'll get in touch with Webster.

In addition to carbon papers and typewriter ribbons, Webster makes duplicating carbon papers and accessories; carbon paper ribbons for photo-offset work; ribbons and carbons for Elliott-Fisher, Addressing, Adding and International Business Machines. Consult your nearest dealer or write to F. S. Webster Company, 7 Amherst Street, Cambridge 42, Massachusetts.

## WEBSTER'S

Typewriter Ribbons and Micrometric Carbon Papers

#### CHARLES KIRK MADE EXECUTIVE VICE PRESIDENT OF IBM

Directors of International Business Machines Corporation have elected Charles A. Kirk executive vice president of the company, Thomas J. Watson, president, announced today. Mr. Kirk, who is also a director of the company, was previously vice president in charge of manufacturing, in which connection he had entire charge of the company's Victory program, handling all government contracts, supervising the construction of all new plants and securing and training new personnel for them, and directing the manufacture of 36 items of war material for the government.

Mr. Kirk joined the company eighteen years ago after his graduation from Western Reserve University, and served in various systems service, sales and executive capacities in Chicago, Pittsburgh and St. Louis before being placed in charge of manufacturing in 1941. He is

a native of Bucyrus, Ohio.

#### ALL SALVAGE COMMITTEES RETAINED

Declaring there was immediate and grave danger of the collapse of the nationwide salvage program before its magnificent job was fully completed, J. A. Krug, Chairman of the War Production Board, emphasized that the 21,000 volunteer salvage committees throughout the country should "stay on the job lest the re-conversion program be impaired." Paper salvage must continue, Mr. Krug said. "Fats and oils likewise must be conserved as much as before. The same applies to tin cans. All of these materials are short and will continue to be short for some time. The salvaging of all of them is of importance to orderly reconversion." Otherwise Mr. Krug warned, "the country may experience a serious problem as the aftermath of the war."

The war's end in no way eases the tight paper situation, Frank Block, director of the War Activities Committee of the Pulpwood Consuming Industries and the Conservation Committee of the Waste Paper Consuming Industries, said a few days ago. "Both the U. S. Victory Pulp-wood and the U. S. Victory Wastepaper campaigns are continuing opera-tions, at least for the present," Block stated. Seriousness of the paper supply situation was demonstrated after President Truman's Victory declaration when the Waste Paper Industry Advisory Committee convened at an emergency session in Washington. Paper can very well become the chief bottleneck to orderly reconversion, the committee was told bluntly by Benton R. Cancell, chief of the Forest Products Bureau of WPB. At the same time, Harold R. Roeschenstein, Deputy Chairman, WPB, warned the group that a continuing supply of paper and paperboard is essential to the national economy.

No improvement in the domestic production of pulpwood can be expected either in the immediate future or for some

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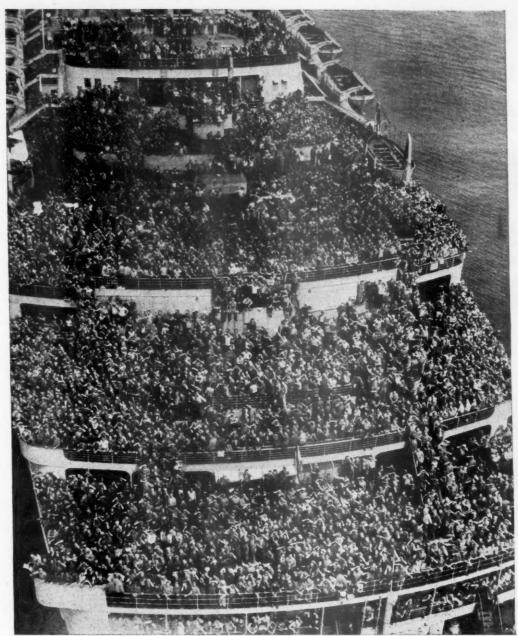
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The Queen Elizabeth arrives in New York

#### THEY FINISHED THEIR JOB-LET'S FINISH OURS!

Our hearts go out to them—for the blazing gallantry they've shown—for the stirring sacrifices they've made. How richly each deserves a hero's homecoming—a nation's thanks! meet to Recalling the job they've done, highlights the job that still remains for us to do: supporting VICTORY the Victory Loan.

Our Victory Bond dollars will

help bring home more loaded transports; help pay for our armies of occupation, too; help provide musteringout pay and loans for veterans; help meet the cost of care and rehabilitation

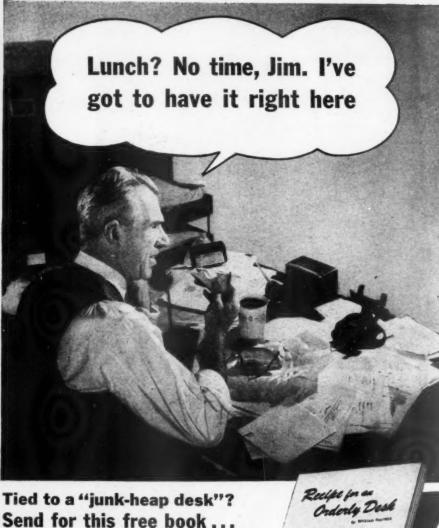
for the wounded as well.

Think of those who made our Victory a reality—and we will not fail to make our Victory Loan a success!

This Space Contributed to the Victory Loan Drive by International Paper Company



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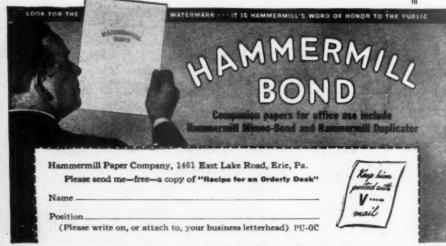
Here is an idea-book published by Hammermill that has given thousands of businessmen a simple, workable "Recipe for an Orderly Desk." It will show you how the habit of "putting it in writing" will keep routine jobs moving and how this habit will help clear your desk and your mind for important work.

Every one of the suggestions in this book has been tested and proved in practice. Try them out. Send the coupon. No obligation. No salesman will call.



Hammermill Bond is a paper made for business use; depend upon it for your office printing.





(Continued from page 264)

time to come, Block pointed out, unless there is a marked improvement in the manpower picture, and there is little likelihood of this taking place. As a matter of fact, the manpower situation may become worse, he said, because of the reported return, according to the War Department, of nearly 18,000 prisoners of war. These prisoners, the Army has indicated, will all be repatriated within the next four months. They have been responsible for approximately three million cords of pulpwood a year and they will be leaving the woods at a time when demand is still months behind supply and current mill inventories are at a critical low. Some industry spokesmen have even expressed the fear that many mills will have to shut down, particularly in the South, if the prisoner exodus comes about.

Insufficient manpower and transportation difficulties have been the two main factors in the critical pulpwood situation since the start of the war and no relief is indicated for probably another 12 months. Very few returned veterans can be expected in the woods for at least this period and homeward bound war workers also are expected to be few for a long while. Railroad car shortage will continue. Other factors which tend to prevent any cheerful view of the current paper and paperboard situation despite the end of the war, include: a feared nationwide let-down in both pulpwood cutting and wastepaper salvage because the war appeal no longer exists; the tremendous backlog of unfilled civilian orders; continuing demand by the armed forces, and the fact that neither Canadian pulpwood nor Scandinavian pulp is coming into this country at anywhere near the optimistically expressed predictions, Block declared. European countries, paper starved for four years, will be making great demands on Sweden and Norway, and Great Britain certainly will depend upon Canada for high amounts of paper supplies, he added.

Board mill owners say that wastepaper is seriously scarce and that inventories are low, due to fact collections fell off all Summer, and especially following end of war, due to waste of thousands of tons "spent" in celebrations throughout the country and lack of interest in salvaging wastepaper since the hilarious period. The wastepaper conservation committee of the paperboard industry is now raising a new fund to publicize the situation in an endeavor to bolster collections. The radio may again be used to reach housewives and others, urging them to continue to save their old newspapers, wrapping paper and boxes.

(National Paper Box Mfrs. Assn.)

#### RESTRICTIONS REMOVED ON CONVERTED PAPER AND PAPERBOARD PRODUCTS

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All quantity restrictions on the manufacture of a large variety of converted paper and paperboard products, including a number of industrial, commercial and household papers in short supply, have (Continued on page 268)

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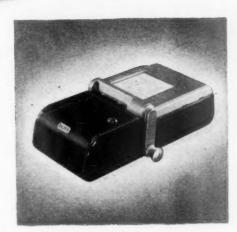
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# What's Your Minutes? Price Tag on Minutes: 304

A minute's a small matter, indeed. But price the minutes it takes your people to write records, using old-fashioned, inefficient forms. Add these up in every department where records are kept, and chances are they re no longer just minutes—but hours of costly, unproductive time!

Moreover, this often means customer delays—delays that risk their goodwill. That's why it's important to modernize your record writing methods with prefabricated forms such as Uarco Registers can bring you. Always ready for instant use, they put an end to the gathering of loose sheets... inserting of carbons... arranging and shuffling...slow, laborious taking-apart jobs.

Load a UARCO Register once—and you have forms enough for a full day's use—or more. They provide a firm writing base and feature clean, legible copies made from an ever-fresh carbon roll. And if desired, there are UARCO Registers that automatically file a copy of every record written. Talk to your UARCO representative. See how UARCO Registers can save you time and money. Or write today.



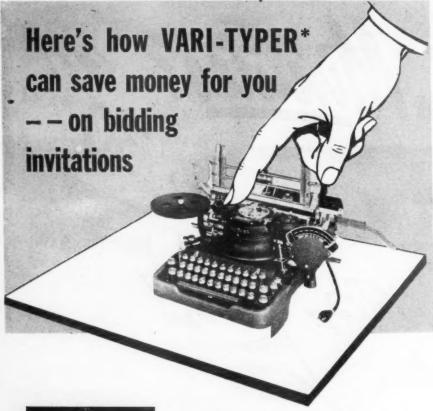
For instance: The UARCO Accu-Rite Register—valuable for all order form writing—automatically refolds a copy and files it in a protection chamber under lock and key. It steps up the writing of orders... provides faster service to customers... safeguards records against loss. Ask for further information.

UNITED AUTOGRAPHIC REGISTER COMPANY Chicago, Cleveland, Oakland • Offices in All Principal Cities



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TYPEWRITTEN 22 PAGES

BY TYPEWRITER...22 pages were required...body copy typed in one style of type on 22 stencils and run off on preprinted forms on the

Mimeograph duplicator. The 22 stencils were proofread, run off, and 22 units were collated

VARI-TYPED 11 PAGES BY VARI-TYPER... only 11 pages were required...two contrasting types were used to obtain a printed effect; variable spacings made this condensation possible; uni-

form impression controlled the eveness of the copy. Only 11 stencils were Vari-Typed, proofread, run off, and only 11 units were collated.

The estimated saving by using Vari-Typer in this instance is 45.2%. Apply this percentage against the cost of paper work in your company, and you will have an indication of the savings you can effect with Vari-Typer. The chances are that many of the forms, reports, manuals, price lists, parts lists, etc., you are now sending to an outside printer can be done more quickly, more economically, with Vari-Typer.

Investigate Vari-Typer for your company. Send for your copy of a free, 16-page folder--Vari-Typer, a new tool for business. Please address your request to Dept.P-9.

\*REG. U.S. PAT. OFF. AND FOREIGN COUNTRIES

HALPH C. COXHEAD CORP.

VARI-TYPER IS AVAILABLE NOW WITHOUT PRIORITIES (Continued from page 266)

been removed, the War Production Board reports.

With the revocation of the paper and paperboard conservation Order (M-241-a), announced lately, increased supplies of such items as toilet paper, facial tissue, paper towels, napkins, drinking straws and waxed paper should be forthcoming, WPB said. Other converted paper products, previously limited to a percentage of normal production, but now unrestricted, are Venetian blinds, window shades, draperies, paper carpets and rugs and retail packages of wrapping paper.

WPB officials said that the order was revoked because it was no longer necessary to the manufacture and distribution of certain paper products for military and essential civilian requirements. Industry appears ready to increase the production of most of these products and indications are that adequate paper is available. WPB said it had been requested by many manufacturers to increase their heretofore limited quotas. Any liabilities incurred for violation of M-241-a, or actions taken by WPB under the order, are still in effect, WPB pointed out.

STENCILS OF OFFICE OF CONTRACT
SETTLEMENT FORM 5A

Special die-impressed stencils of Office of Contract Settlement Form 5a—Supporting Schedules: Application for Disposing of Plant Equipment are now available from A. B. Dick Company, 720 W. Jackson Boulevard, Chicago.

These special stencils are already

These special stencils are already stencilized with Form 5a as specified by the Office of Contract Settlement and are merely filled in by the typist, then attached to the Mimeograph duplicator and completed copies run.

SILVER STAR POSTHUMOUSLY AWARDED T. JAMES FERNLEY

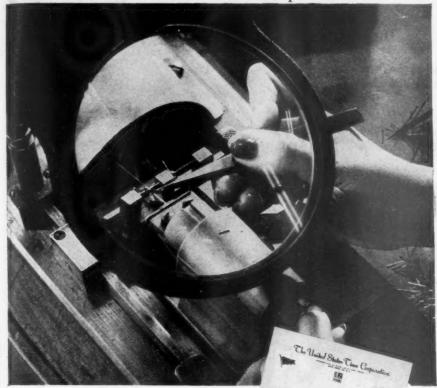
First Lieutenant T. J. Fernley, II, Cavalry, son of George A. Fernley, secretary-manager of The National Supply & Distributors' Assn., was posthumously awarded "By direction of the President, the Silver Star, the Bronze Star Medal, and one Oak-Leaf Cluster representing an additional award of the Bronze Star Medal."

He took part in the siege of Brest where he received the Bronze Star award on September 18, 1944, for capturing 28 Germans singlehanded. From there he went to Aschen, and was cited for gallantry in action in Germany.

Lieut. Fernley received the Silver Star for gallantry in action against the enemy on April 24, 1945. He died of wounds on

He participated in the D-Day invasion of France and led his tank platoon into St. Lo when it was captured. He was slightly wounded there and received the Purple Heart and a battlefield promotion to that of First Lieutenant.

Prominent Users of Strathmore Letterhead Paper: No. 62 of a Series



#### has your letterhead kept time WITH YOUR BUSINESS?

Ingersoll...an outstanding name in "time," is created by United States Time Corporation, world's largest manufacturers of watches. During the war this company made the most delicate of precision instruments for our fighting machines. Now they resume the manufacture of spring-winding clocks, electric clocks, and timing devices for all industrial uses.

U. S. Time Corporation chooses Strathmore paper for its letterhead, one that must "keep time" with the growing reputation and progress of an organization famous for precision and integrity. YOUR letterhead, representing you in all business contacts, should properly express your present standing and future prospects. With lighter weight papers necessary under government regulations, quality is more important than ever. The Strathmore watermark is your assurance of that quality.

# STRATHMORE OF FINE PAPERS

Strathmore Paper Company, West Springfield, Massachusetts

YOUR WASTE PAPER IS STILL NEEDED! Paper salvage must continue, lest the reconversion program be impaired. Paper shortage can be a serious bottleneck. Continue to get your waste paper into the hands of your local salvage dealer or committee.

# TODAY'S PICTURE

Current Strathmore advertising points out how essential paper is to the war effort, features leading industries that use Strathmore in their Victory programs, stresses the point that good letterheads help maintain the reputation every firm is guarding today.

\* \* \*

This series appears in:

FORTUNE
TIME
BUSINESS WEEK
UNITED STATES NEWS
NEWSWEEK
FORBES
ADVERTISING & SELLING
TIDE
PRINTERS' INK
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PIANT PURCHASING AND ENGINEERING EXECUTIVES

- 1. It contains all important classifications and details.
- 2. It eliminates duplicated and non-essential classifications.
- 3. It is compact, easy to handle, easy to consult.

Because it is thus streamlined for your use, it saves you time by giving you quickly what you need to know—about "who makes what," trade names, addresses, chemicals, mechanical data.

Keep it right on your desk-it is big enough to give you full information.

Use it today-and you will use it every day.

A CONOVER-MAST PUBLICATION
(Formerly Plant-Production Directory)

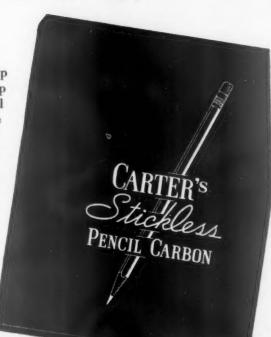
PLANT PURCHASING DIRECTORY
333 North Michigan Avenue • Chicago 1, Illinois

Need Office Help?



You BET you need help these days! So take a tip from the kitten: use pencil carbons that never stick to the forms and waste time! In other words, use Carter's Stickless Pencil Carbons.

These fine carbons are clean to use, brilliant, with an extralong life span. And Carter's Stickless Pencil Carbons are available in odd sizes, too, to fit your special requirements.



THE CARTER'S INK COMPANY
Boston, Massachusetts

Carbon and Ribbon Specialists

You can buy fine
DIANONDS

with Complete Confidence
from L. & C. MAYERS CO.



Selections sent for inspection without obligation.

L. & C. MAYERS CO.

Diamond Merchanits since 1912
545 FIFTH AVENUE, NEW YORK 17, N.Y.



# PERSONALITIES in the NEWS

#### Ilgenfritz Joins Carnegie-Illinois Steel

Made Vice President in Charge of Purchases

Corl A. Ilgenfritz has been appointed Vice President in charge of Purchasing of Carnegie-Illinois Steel Corporation, a newly established management responsibility, and R. L. Van Cleve has been



Carl A. Ilgenfritz

named General Purchasing Agent, with headquarters at 434 Fifth Avenue, Pittsburgh

Mr. Ilgenfritz previously was Manager of Purchases and Raw Materials for the Republic Steel Corporation, Cleveland, Ohio. He commenced his business

career as storekeeper for the Youngstown Sheet & Tube Company, joining the Brier Hill Steel Company in 1913, becoming Purchasing Agent in 1918.

For several years Mr. Ilgenfritz was vice president of the Stroh-Ilgenfritz Company of Youngstown, Ohio, a company dealing in raw materials, from which he resigned in 1924 to become assistant purchasing agent of the Youngstown Sheet & Tube Company. When Republic Steel Corporation was organized in 1930 he became Director of Purchases, a position which he held with the Central Alloy Steel Corporation of Massillon, Ohio, one of the companies included in the Republic Steel merger. He was made Manager of Purchases and Raw Materials for Republic in 1933.

Mr. Van Cleve is a graduate of Princeton University and entered the employ of Carnegie-Illinois early in 1914 at the Edgar Thomson Works. After several years at that plant he was transferred to the office of special agent in charge of blast furnace products and scrap. He was made assistant purchasing agent, Pittsburgh district, in October 1935.

#### Republic Steel Appointments

Laskey Made Manager of Purchases Adams General Purchasing Agent

Fronk J. Loskey, General Purchasing Agent of Republic Steel Corporation, Cleveland Ohio, has been made Manager of Purchases and Raw Materials, succeeding C. A. Ilgenfritz who is leaving Republic to take a position with the

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F. J. Laskey

United States Steel Corporation. William T. Adams, chief electrical buyer, succeeds Mr. Laskey as General Purchasing Agent.

Mr. Laskey, who is a native of Rock Creek, Ohio, began his business experience with the General Fireproofing Company in Youngstown in 1906, leaving the tompany's purchasing department in 1917 to become purchasing agent for the Liberty Steel Company of Warren. In 1919 he became General Purchasing Agent of the Newton Steel company, serving as the result of successive mergers, in the same capacity with Corrigan McKinney Steel Company and then with Republic

Steel Company and then with Republic.
Mr. Adams, who was born in Roumania and whose father installed the first electric light plant in that country, grew



W. T. Adams

up in Canton, Ohio, and in 1919 entered the Stark Divison of Berger Manufacturing Company, leaving there in 1926 to become sales manager of the Moock Electric Supply Company of Canton. He came to Republic as chief electrical buyer in 1933.

(Continued on page 274)

#### T. A. Clohosey Awarded Westinghouse Order of Merit

T. A. Clohosey, veteran Purchasing Agent for the Westinghouse Electric Corporation's Lamp Division at Bloomfield, N. J., has the distinction and honor of being the recipient of the Westing-



T. A. Clohosey

house "Order of Merit," the highest employee honor bestowed by the company. The presentation of the award was made

by Andrew H. Phelps, vice president in charge of purchasing and traffic, Pittsburgh.

The award was accompanied by a citation reading as follows: "For his cooperative spirit in making purchasing effective in the scheme of things for the Lamp Division; for his success in coordinating with other divisions the large and difficult task of obtaining materials needed for the manufacture of Westinghouse products; and for his willingness to assume and carry heavily increased responsibilities during a trying period."

Mr. Clohosey has been associated with the Lamp Division for 44 years, and has been purchasing agent for 37 years. He was one of the organizers of the Purchasing Agents Association of New York in 1914, and of the National Association in 1915, and in 1922 served as president of the National.

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Frank J. Rief, general Purchasing Agent, Carnegie-Illinois Steel Corp., has retired after more than 33 years of active service. ing

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# REVOLUTION in Piston Packing

Darcova Pumcups Provide Scientific, Precision-Fitted Packing for Reciprocating Pumps and Hydraulic Pistons

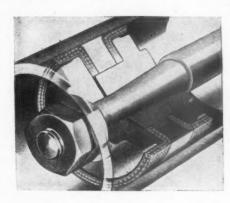
FOR centuries piston-packing has been a neglected science. Even James Watt, in 1769, was content with a cylinder bored to a tolerance of a shilling's width. Today there are just about as many methods of piston-packing as there are maintenance men.

But in 1940 Darling Valve & Manufacturing Company did something revolutionary. Darling had had forty years' experience making close-tolerance composition valve cups for oil well pumps. These cups had to work thousands of feet under ground, pumping oil through sand under high pressures, frequently under corrosive conditions. These composition cups became so well established that oil men called all valve cups by the Darling trade name, "DARCOVAS".

With this background, Darling in 1940 introduced a new, scientifically-designed pumping cup for reciprocating pumps and hydraulic cylinders. Made to unusually close tolerances, these cups fit exactly standard pumps and cylinders, with oversizes for rebored cylinders or liners. They are available in 70 sizes from 1" to 20", and come in three textures, with special sanitary finish for food or other special applications.

Installed in hundreds of plants all over the country, these cups are lasting from two to ten, sometimes even a hundred times longer than leather crimps, rubber cups, hydraulic packing, metal rings, plastic rings, and other types of piston packing. The extra service they give may extend for many months.

In scores of plants Pumcups have kept pumps and cylinders operating in tough



wartime service, and have eliminated costly delays and repairs. Pumcups successfully handle boiler feed water, sewage, brine, refrigerants, liquors, wines, milk, most alkalies and acids—practically all commonly used industrial fluids.

SPECIAL PISTONS—Darcova Pumcups can be used with standard cup-type piston design, but to enable the product to work at maximum efficiency, Darling manufactures iron, steel and bronze pistons which greatly lengthen the service and improve the performance given by Pumcups.

If you are concerned with frequent shutdowns for repacking pistons in pumps or hydraulic cylinders or if pump repacking bills and down-time are running to extremes, Darcova Pumcups can save you money and help keep your plant on stream.

Write for further information, and free Bulletin No. 4401. Or ask your local mill supply distributor about Darcova Pumcups.

#### **NOTE THESE RESULTS:**

One set of Pumcups in a Worthington pump in Illinois have lasted over 7,000 hours, have pumped more than 1,000,000 barrels of oil.

746 days wear vs. 10—Pumping butane gas in a Dean Bros. Duplex 6 x 4 x 6 bydraulic packing lasted only 10 days, the liners about 60. One set of Pumcups lasted 746 days, liners still in perfect condition.

26 weeks vs. 2 weeks — A soap manufacturer pumps spent lye and slop with Pumcups. Former packing lasted two weeks, Pumcups from six to eight months (13 to 21 times longer). This company has standardized on Pumcups.

120 days vs. 10 days—Operating soaking pit covers in a Pittsburgh steel mill, bydraulic cylinder packing lasted ten days. Pumcups last more than 120 days. This mill is equipping all bydraulic cylinders with Pumcubs.

8 weeks vs. 2 weeks — Handling abrasive lime slurry twenty-four hours a day, rubber piston cups in a 14 x 6 x 14 Gardner-Denver pump lasted only two weeks. Darcova Pumcups now last eight weeks on the average and liners last ten times longer than before.

2,000 hours vs. 20 hours—In a ceramic extrusion press, operating at 12,345 p.s.i., leather cups lasted four to twenty hours. Pumcups lasted over 2,000 hours. This plant is 100% Darcova equipped.

48 weeks vs. 10 weeks—On September 27, 1943, Pumcups were installed in one cylinder of a 3½ x 5 x 10 National Transit duplex feed water pump at Parkers Landing, Pa. Good quality, conventional bydraulic packing was installed in the other. The hydraulic packing bad to be replaced after ten weeks. The Pumcups are still going strong after 48 weeks.

THE ORIGINAL COMPOSITION CUP

DARLING VALVE &

THE ORIGINAL COMPOSITION CUP

Manufacturing Co.

WILLIAMSPORT, PA.

Darling Valve & Mfg. Co., Dept. H, Williamsport, Pa.

Gentlemen: I want to know more about Darcova Pumcups. Send your free Bulletin 4401 and name of local distributor.

Name\_

Company\_\_\_\_

Address.

City\_\_\_\_

\_State\_

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This screw-machining plant can become an important department of your factorythrough quick service of your requirements for such partsprecision-machined to perfection for immediate trouble-free assembly. Secondary operations such as heat treating, grinding, drilling-almost any processing operations you specify are obtainable here. Send your blue prints for quick quotations.



(Continued from page 272)

J. J. Clark succeeds William W. Griswold as Purchasing Agent of the Wheeling & Lake Erie and Lorraine & Western Virginia Railways. He formerly was assistant purchasing agent, which office has been abolished. Mr. Griswold retires after 40 years of railroad service, 32 of which were with the W&LE. He joined the W&LE in 1905 serving in various capacities with that railroad and the Wabash Pittsburg Terminal until 1913 when he was made Purchasing Agent.

J. E. Doxey, Assistant Purchasing Agent for Duke University, Durham, N. C., since 1934, and Acting Purchasing Agent during 1941-44, has been appointed Purchasing Agent of the University, succeed-



J. E. Doxey

ing O. G. Sawyer, who has resigned to enter business in Durham. Mr. Doxey is a graduate of Duke University of the Class of 1929 and holds the A.B. and M.A. degrees. As an undergraduate he was a member of Phi Kappa, Omicron Delta Kappa, and Kappa Delta Pi. He was a member of the Duke track and cross country teams, winning letters in both sports for two years and captaining the cross country team during his senior year. Following his graduation Mr. Doxey, who has specialized in languages, taught school and for 18 months was in the insurance business. He entered the service of Duke University in May 1934. He is a member of the Educational Buyers Assn., and the Virginia-Carolinas Purchasing Agents Association. The Duke purchasing department now comprises a personnel of seven persons.

Joseph W. Nicholson, Purchasing Commissioner, Milwaukee, Wis., recently completed a three-day investigation of conditions in the city of Cleveland's purchasing department. Mr. Nicholson was called to Cleveland upon recommendation of representatives of three large war plants that the survey be made, following criticism of the operations of the department.

Carl Fround has been made Purchasing Agent at Thompson Products, Inc., Cleveland, Ohio, succeeding W. Williams, assistant director of purchases who has been made Assistant Director of Pro-curement at Harry Ferguson, Inc., Detroit, Mich.

(Continued on page 276)



Who uses "American Swiss" Swiss Pattern Files? Nearly every metal craftsman . . . tool and die makers, silversmiths, watchmakers, makers, finishers in every industry from builders of giant turbines to makers of the precision instruments which control the flight of our mighty aircraft use these precision tools.

Craftsmen who know the importance of quality in tools look for the name American Swiss on the files they buy because they know from years of experience that these files are uniform in hardness . . . fast cutting . . . smooth finishing . . . and economical. Craftsmen know, too, that there are over 3,000 American Swiss styles, cuts and sizes from which to choose. That's important because using the correct file for the job speeds the work and produces a better job.

Keep your filing costs to a minimum having your shop properly equipped with American Swiss Swiss Pattern Files. Leading distributors everywhere carry a full stock.

Buy from Our Distributor AMERICAN SWISS FILE & TOOL CO. ELIZABETH 1 NEW JERSEY



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# Build longer life, better performance, into your products...with rugged, dependable

# SPERTI HERMETIC SEALS



Buyers who have waited through the war years will be looking for big improvements in your products. You'll have to meet civilians' expectations... just as you have met military specifications.

You can do it by building longer life, better performance, more trouble-free operation into your products. That calls for Sperti Hermetic Seals, the rugged. dependable, war-proved seals that effectively shut out dust, moisture and deteriorating agents.

Sperti Hermetic Seals are durable, one-piece units, easily soldered-in at less expense. Because of Sperti's advanced manufacturing methods, plus exhaustive tests and inspections, you'll get "true" seals that cut down production delays and costly rejects in the inspection line.

WRITE, TODAY. Get the facts. Find out about the many product applications of Sperti Hermetic Seals and their performance advantages.

HERE'S WHY
LEADING MANUFACTURERS CHOOSE
SPERTI HERMETIC SEALS

Seal out dust, fungus, salt spray, sand atmosphere at high altitudes, etc.

Will add longer life to a product.

Will help reduce operational

Are one-piece, rugged units. Easily soldered-in at less expense.



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RESEARCH • DEVELOPMENT

MANUFACTURING

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# "ALLIED engineers worked hand in glove with our purchasing department"

The quarter century experience of Allied's engineering and production staffs in steel fabrication guides orders through the Allied plants in record time and with due consideration of purchasing agents' cost schedules.

Plant facilities are ideal for fabrication of mass tonnage to exact specifications. Many thousand tons of "made-to-order" structural steel roll from the shops annually.

Consult Allied on your next purchase of fabricated structural steel. You will find costs reasonable, deliveries on schedule whether your requirements are for one ton, a thousand tons, or more.

Bomber Assembly Plant, one of the world's largest buildings, 29,681 Tons of structural steel delivered at the rate 8,000 tons per month.





# ALLIED

#### STRUCTURAL STEEL COMPANIES

Engineers • Fabricators • Erectors

- Clinton Bridge Works, 101 S. Second St., Clinton, Iowa
- Gage Structural Steel Co., 3123-41 S. Hoyne Ave., Chicago 8, III.
- Midland Structural Steel Co., 1300-20 S. 54th Ave., Cicero 50, III.

Address the company nearest you

Three companies, with total structural steel capacity of 75,000 tons, who have pooled their facilities under centralized control and responsibility.



(Continued from page 274)

Ottis O. Albritton has been promoted to assistant to the vice president of the Illinois Central System in charge of purchases and stores, with headquarters in Chicago. A native of McComb, Miss., Mr. Albritton has spent 27 years in this one department, having entered Illinois Central service as a laborer in the stores department at McComb in 1918. At that time he reported to Leonard L. King. then division storekeeper at McComb. now general purchasing agent for the entire railroad at Chicago. Until January 1, 1940, Mr. Albritton worked at Mc-Comb as stockman, stockkeeper, clerk, line stockkeeper and chief clerk to the division storeeeper. Throughout 1940 and until September 1941, he worked in Chicago as a special clerk in the office of the general storekeeper. He has been division storekeeper at Memphis, Tenn.,

John Geiger, who has just completed 45 years of service as Purchasing Agent for the Kellogg Switchboard & Supply Co., Chicago, Ill., headed a list of employees who recently received awards in



John Geiger, right, receives award from Pres. J. G. Kellogg

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proportion to length of faithful service. J. G. Kellogg, president of the company, presented Mr. Geiger with a gold watch together with a unique watch charm in the form of a gold miniature Kellogg telephone. Mr. Geiger's service with Kellogg Switchboard dates from July 1900 when he started in the cost department. Later he was appointed head of the Purchasing Department in which capacity he has served up to the present.

Frank G. Corregon has been appointed Purchasing Agent of the Pittsburgh Limestone Corporation, according to announcement by President A. W. Worthington of the United States Steel subsidiary. Mr. Corregan succeeds Robert Carter, deceased. Mr. Corregan has been with the company 24 years, the past 18 as superintendent at Millville, W. Va. He is a graduate of Cornell University.

F. R. Sherwood succeeds Fred P. Hanson as Manager of Purchases and Stores for the Pacific Gas & Electric Co., San Francisco, Calif., retired.

(Continued on page 280)

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#### EXIDE'S DEPENDABILI HISTORY'S BIGGEST LABORATORY

On automotive equipment of every kind-tens of thousands of units -Exide Batteries dependably served through every battle, in every campaign, in every theatre, in all climates. This enviable record made by Exides in the laboratory of actual war combat was the result of vast engineering research and the knowledge gained during 57 years of battery building experience.

There are Exides for every storage

battery need. Exide Batteries furnish motive power for the efficient, time-saving, electric industrial truck and for mine locomotives, trammers, and shuttlecars. Exides are used by central power stations, telephone and telegraph companies, radio stations, railways

and in ships and aircraft of all classifications.

And in millions of cars, trucks and buses these powerful, long-lasting batteries continue to prove that "When it's an Exide, you start."

The name Exide stands for dependability and low cost operation. Information regarding the application of storage batteries in any business is available on request.

SERVED OUR ARMED FORCES IN MORE THAN 100 APPLICATIONS

THE ELECTRIC STORAGE BATTERY COMPANY Philadelphia 32 Exide Batteries of Canada, Limited, Toronto

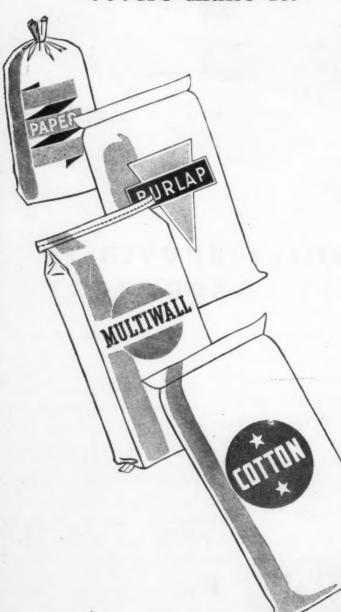
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# Whatever's the BEST BAG FOR YOUR USE

...we make it!



East Pepperell, Mass.

WHEN you buy your bags from Bemis, among the important advantages you enjoy is this: You can buy whatever type is best for your particular use—cotton, paper, multiwall, burlap or waterproof.

Bemis is a leading producer of all types of bags and consequently has no reason to high-pressure you toward any one type. We have no favorites. If our experienced packaging specialists can help you to determine which is the best for your use, you may be sure that their analysis and advice will be unbiased.

Whatever's the best bag for your use ... we make it.

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BEMIS BRO. BAG CO.

OFFICES: - Baltimore - Boston - Brooklyn - Buffalo - Charlotte Chicago - Denver - Detroit - East Peppacell - Houvan - Indianapolis Kansas City - Los Angeles - Louisville - Memphis - Minneapolis - Mobile - New Orleans - New York City - Norfolk - Oklahoma City Omaha - Peoria - St. Helens, Oire - Salina - Salt Lake City - San Francisco

BETTER BAGS SINCE 1858

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use the self-contained, semi-automatic

# **B** No. 65 R





• It's ready in a jiffy to cut perfect threads on 1", 11/4", 11/2" or 2" pipe-1 set of dies does it, and they stay in the threader, can't get lost. You set the 65R to pipe size in 10 seconds. You set the mistake-proof workholder instantly without bushings. You cut threads rapidly, without effort. You save time and work with this rugged steel-and-malleable precision tool-it's one you'll enjoy owning and using. Demand is ahead of supply just now-but keep asking your Supply House.

More Service... **Less Upkeep** UNCONDITIONAL GUARANTEE If this Housing ever Breaks or Distorts we will replace it Free THE RIDGE TOOL CO. when you use the Guaranteed RIBID **Heavy-Duty Pipe Wrench** 

• It looks different—but the real difference is in its performance. The housing simply won't break or warp - no bother or expense of repairs. Fullfloating hookjaw (with handy pipe scale) and replaceable heeljaw take hold instantly, won't lock on pipe. Adjusting nut in open housing spins to pipe size. Powerful comfort-grip I-beam handle eases hard pulls. Ask your Supply House for the rugged work-saver RIPAID. We're manufacturing more of

them than ever, but it's not enoughplease be patient.



Millions of RIBOID Tools in use



WORK-SAVER PIPE TOOLS

The Ridge Tool Company Elyria, Ohio, U.S.A.

Остов



## THEY PUT METAL CUT-TING ON A NEW LOW COST BASIS

The shops that are setting records for fast, economical metal cutting are the shops that standardize on Spartan Hacksaws. There is a Spartan Blade for every metal cutting job and each does its job at the lowest cost per cut.

Manufactured and heat treated by the Spartanized Methods which have brought hundreds back for more Spartans.

Stocked by distributors in your territory.

Spartans Get Results Spartan Saw Works, Inc. SPRINGFIELD, MASS.

(Continued from page 276)

Col. Ralph L. Hart, until recently, Director, Procurement Division, Procurement and Distribution Service, Office of Chief Signal Officer in Washington, has returned to the Western Electric Company's New York headquarters as distribution manager of the telephone sales division. In this capacity Col. Hart takes charge of the company's 29 distributing houses serving the Bell System throughout the nation, the post he held before entering service in 1942, as a Lieutenant Colonel in Army Ordnance. At the conclusion of his military assignment. Col. Hart received from Major General H. C. Ingles, Chief Signal Officer, the Legion of Merit Award for his outstanding service in facilitating the procurement and production of Signal Corps supplies and equipment. Col. Hart joined Western Electric Company in 1916 as a civil engineer. He became distribution manager in New York in 1941.

A. M. McKelligon succeeds Hobart W. Mears as Purchasing Agent for the Matson Navigation Co., San Francisco, Calif., who is retiring. Mr. Mears is a past president of the Purchasing Agents Association of Northern California, of which he has been a member for 27 years. He has been extremely active in association affairs, serving in all of the executive offices, was appointed National Director in 1931. He took an active part in the association's educational activities, serving as lecturer at Extension Course in Purchasing at the University of California in 1929 sponsored by the association's educational committee. Mr. Mc-Kelligon joined the Matson Navigation Company in 1934.

George W. Kohlmetz, Purchasing Agent, Cleveland Twist Drill Co., Cleveland, Ohio, has retired. He joined the company in 1902 at the age of 32, organized the Purchasing Department and became the company's first Purchasing Agent— 43 years ago. The Midwest Purchaser quotes a salesman friend of his as saying: "George Kohlmetz is the salt of the earth type. Anyone who has had dealings with him usually leaves his office feeling that he has had a pleasant reception, if not always a profitable one from a business point of view. He selects his friends and holds them, treats all impartially, enjoys keen business dealings and is always fair with suppliers and with his company."

Harry Benson, formerly Assistant Purchasing Agent, Isaacson's Iron Works, Seattle, Wash., has been appointed Pur-chasing Agent, succeeding Carroll Holloway who has been made assistant manager of the company's structural department, after 15 years' service in the purchasing department.

A. G. Fidel has been made Purchasing Agent for the Western Gear Works, Seattle, Wash., succeeding Charles P. Kreuger who resigned to go into business for himself. Mr. Fidel formerly was assistant purchasing Agent.

(Continued on page 282)

LET US QUOTE YOU ON YOUR

## WIRE SPOOLING

#### FOR IMMEDIATE OR POST-WAR NEEDS

Estimates cheerfully given on the spooling of your wire. Large or small orders equally welcome. Our facilities are the best. Any type wire, covered or uncovered to your specifications on any size spool.



QUICK DELIVERY

FINE SPOOLING GUARANTEED

LOW PRICES

wire your spooling problems up to us and see the difference. Compare our low prices - then judge for yourself.

Capable of producing large volume tonnage. Inquire without obligation

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### 29,700,000 LOST MAN DAYS\*

Lost because of injuries to head and eyes in 1943. Supply workers with equipment they will wear—designed for comfort and protection. Investigate Sellstrom safeguards now. At your jobber or write.

Statistics from OWI and Nat'l Safety Council.



634-10 N. ABERDEEN ST. . CHICAGO 22, ILL.

Improved.



In addition to industrial hose, Weather-head plants make all types of fittings, valves, hydraulic cyl-inders and other parts for these industries:

AUTOMOTIVE

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REFRIGERATION

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MARINE

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APPLIANCE MANUFACTURERS

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THE WEATHERHEAD COMPANY, CLEVELAND &, OHIO Plants: Cleveland, Columbia City, Ind., Los Angeles Canada — St. Thomas, Outario

New uses are being found daily for the application of our improved industrial hose lines on machinery of all kinds. We manufacture hose assemblies of all types to withstand pressures up to 10,000 P.S.I. They can be equipped with either permanent crimped ends or with re-usable, quickattachable hose ends. For information or literature write or phone any Weatherhead branch office.

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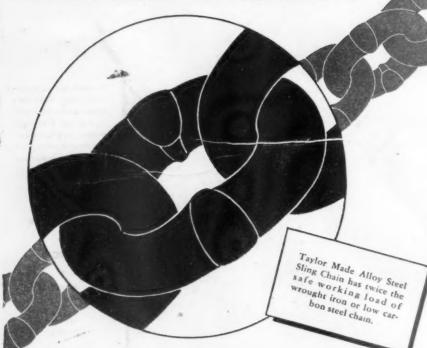
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**EXTRA SAFETY** 



#### -in TAYLOR MADE CHAINS



Taylor Made Alloy Steel Sling Chain is used extensively throughout the steel industry for it has twice the safe working load of low

carbon steel or wrought iron chain. Every link is carefully inspected and every chain thoroughly tested before it leaves the factory. That's why it's fast becoming a must with production men everywhere who demand safety from chain. And there's no charge for this extra Taylor Made safety. Write today for free booklet.



BOX 509 P10 . HAMMOND, INDIANA

(Continued from page 280)

John T. Shelbourne has been appointed Purchasing Agent for the Nordby Supply Co., Seattle, Wash., to succeed Don Raymond.

E. R. Carico has been made Purchasing Agent for Ben Hur Products, Los Angeles, Calif. He formerly was Purchasing Agent for the Crescent Manufacturing Company of Seattle, Wash.

Jerome T. Hermons has been appointed Purchasing Agent for the Jensvold Company, of Olympia, Wash., tool and die manufacturers and metal fabricators. He formerly was buyer for the State of Washington.

George L. Kemp, commissioner of finance, Cheyenne, Wyo., has been appointed Purchasing Agent for the City.

Norman P. Levine, formerly Assistant Purchasing Agent of Benrus Watch Co., has been appointed Assistant Purchasing Agent of the Casco Products Corp., Bridgeport, Conn., manufacturer of automotive accessories.

Leo J. Weil has been named Acting Purchasing Commissioner, Cleveland, Ohio. Mr. Weil, an employee in the purchasing department, was previously connected with the engineering department.

Charles F. Nostrant has been made General Purchasing Agent for the United Paperboard Co., He formerly was connected with the Upson Co. in Lockport, N. Y.

Howard S. Van Cleve, former Purchasing Agent of Aero Spark Plug Co., New York, has become a partner with William H. Brouwer & Co., factory representatives.

George H. Wagner succeeds Ralph W. Lohse, formerly Purchasing Agent for The Amco Corporation, Chicago, petroleum handling equipment, who has been appointed assistant manager of sales of that company.

Albert M. Quarles, formerly Purchasing Agent, Hotel Stevens, Chicago, and later the Hotel Windermere, has been made assistant to the president and general manager of the La Salle Hotel.

Frank E. McLaughlin, formerly a senior Purchasing Agent for the Navy in Chicago has become associated with the Chicago sales staff of the mechanical division of the United States Rubber Company.

Merrit H. Dowling has been promoted to Purchasing Agent of the DeLaval Separator Company, Poughkeepsie, N. Y., succeeding Wilbur C. Brelsford who is ill. Mr. Dowling has been connected with the De Laval Company since 1922. He began as stores auditor and won advancement through the accounting department. Previous to his appointment as Purchasing Agent he was assistant works controller.

(Continued on page 284)

WANT 50,000 TWINS...ALL ALIKE? 

> Right now, identical twins of molded plastics are rolling off our machines by the thousands, all earmarked for the military services, where uniformity is of prime importance.

> In the postwar tomorrow, General Industries will once again be able to offer you the experience and equipment that will mold your plastic parts, efficiently and economically, the last piece as accurate as the first.

> From blueprint to finished product, manufacture will be speeded by experienced engineers. For instance, we can offer slight changes in design that will improve the moldability of the product. Ingenious mold makers realize the utmost importance of accurately-placed inserts, close

tolerances and finish to meet the most critical specifications. Skillful operators, working with modern equipment, will turn out any quantity of identical pieces that will work smoothly and efficiently in your finished products.

General Industries is among the top capacity molders of America. Our combination of skilled experience, fine craftsmanship and adequate machinery can help mold salability into your postwar products.

#### THE GENERAL INDUSTRIES COMPANY

**Molded Plastics Division** 

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Philadelphia: Phone Camdon 2215





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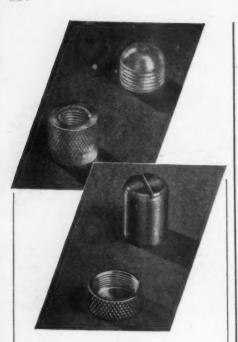
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#### EITHER IS "O. K." AT HARTFORD

Inside threads...outside threads ... knurls ... in fact, any of the machining jobs you expect of HARTFORD in metal you may also expect of HARTFORD in plastic. The only difference in using either material are those imposed by the characteristics of the material itself. Vast precision secondary operation equipment for producing complete mechanical assemblies, component parts and sub-assemblies.

#### PLASTICS

From Rod & Tubing

Centerless Ground • Machined Borizing • Slotted • Milled • Knurled Drilled . Threaded . Tapped

**Metal Inserts** 



#### THE HARTFORD MACHINE SCREW COMPANY

Designer of Methods since 1876

SCREW MACHINE PRODUCTS 1/64" to 5" Dia. All Metals

HARTFORD, CONNECTICUT

(Continued from page 282)

Lee A. Baumover has been made Purchasing Agent of the Northwest Marine Iron Works, Portland, Ore., succeeding Richard Pearson. He joined the firm about six months ago. He formerly was head of the city of Portland's Purchasing

Abe Courtright, veteran purchasing agent for Northwest and Alaska firms, has been named Assistant Supervisor of Purchasing in the department of Finance, Budget and Business, Olympia, Wash.

Charles W. Anklam, for many years general manager of the C. M. Hall Lamp



Company, Detroit, Mich., has been named executive assistant to the president, with jurisdiction over plant operations, engineering, Purchasing and distribution.

Hugo V. Gamper has been appointed Assistant General Purchasing Agent, according to announcement by Leonard L. King, general purchasing agent of the Illinois Central System, Chicago, Ill. Mr. Gamper was born and educated in Chicago and has spent his entire Illinois Central career in the purchasing department. He started September 14, 1917, as office boy and has held practically every clerical position in the headquarters office, specializing during the last ten years in matters pertaining to state and federal regulations, such as sales taxes and priorities.

Ernest H. Hawkins, director of the Purchasing Department of E. I. du Pont de Nemours, Wilmington, Del., has been awarded the Arents Medal "for excellence in commerce and industry" by Syracuse University. Mr. Hawkins is an alumnus of Syracuse Class of 1907, and a trustee of the University. He has the distinction of having been president of both the Purchasing Agents Association of New York, and the Purchasing Agents Association of Philadelphia.

Dewey Bjork succeeds W. K. Carter as Purchasing Agent for the Montreal Mining Co., Ironwood, Mich. Mr. Carter has retired after 36 years service with Ogleby, Norton & Co., and associated companies. He was first employed by Ogleby, Norton & Co. as cashier at Commonwealth, Wis. in 1909, was made Purchasing Agent at the Gogebic range office, Ironwood, in 1907, and in 1931 went to the Montreal Mining Co. in the same

(Continued on page 288)



#### HARTLEY TUNGSTEN-CARBIDE Special Shaped

No need to werry about facilities for fast and reliable production of special-shaped dies — that's the specialty of the Hartley Wire Die Company. Skilled workmen, combined with extreme manufacturing care and meet critical in-spection, assure you dies of the high quality you require, and the prompt service you desire.

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"Freen blueprint to finished product" that's Hartley service. Just send us prints of the dies you require; no prob is too tough, no job too large or set Every assistance we can give is yours.

THOMASTON, CONN. 10 ELM STREET

NEW! Takes but a second to close or open!

GRAND QUIKCET

CHECK THESE FEATURES

Instant Ratchet Screw Closing Opens in stantly with Trigger Reease. No wasted time run

Balanced Precision Grip at all points Hardened serrated jaws integral with body—» aw plates to come loose Heavy guide rods

Multiple Strength-Alloy-Steel extra thic wall body construction. VAnviltop. Botton screw clamp for quick shifting of vise.

QUIKCET VISE can be closed or opened in a jiffy. Simply push on faw to close, and tighten with turn of handle. Balanced Grip holds firmly. OPENS INSTANTLY to full 3 inches by trigger release. Ready for further work with out adjustment.

Prompt Shipment.

Write for Complete Catalog of Speed Clamps and

GRAND SPECIALTIES COMPANY 3115 W. Grand Ave. . Chicago 22, Illinois







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# **HYSTER** proudly presents the



AND CRANE COMBINATION for use with Track-Type Tractor and Buildozer...
ALL IN ONE WORKING UNIT

Multiplies the production use of your "CATERPILLAR" DIESEL TRACTOR . . .

- SIZES. Available for the "Caterpillar" models D6, D7, D8.
- DRAGLINE AND CLAMSHELL. Handles (on a D7) ½ cu. yd. dragline bucket; ¾ cu. yd. digging clamshell or ½ yd. rehandling clamshell. Other models in proportionate canocities
- CRANE. Swinging live boom, with maximum lifting capacities in any position.
- MOUNTING. On in 2 hours (with 2 men); off in 1 hour.
- MOBILITY. Full tractor mobility is retained. Crawler track oscillation is not impeded. Tractor rigidity when desired is accomplished by crank control at masthead.
- operation. Conventional shovel and crane controls. 240° swing at speed of 4.5 RPM.

THIS is the most important product announcement Hyster Company has made in the 16 years we have specialized in building tractor equipment.

The addition of a Hystaway to a "Caterpillar" tracktype tractor gives you *one piece* of production machinery that combines tractor—bulldozer—dragline, clamshell and crane.

Back of Hystaway lies the best engineering skill in the tractor equipment business. Years of field tests in various sections, under all working conditions, have proved Hystaway's performance, stamina, versatility.

READY. Completely illustrated booklet on Hystaway—how it's built—what it does—how it does it. Write for your copy.



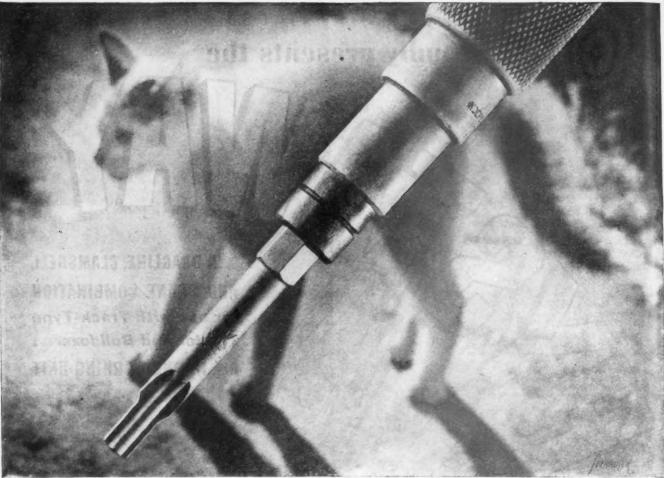
Sold and serviced by "Caterpillar" dealers and distributors throughout the world.

HYSTER COMPANY

2978 N.E. Clackamas, Portland 8, Ore. 1878 North Adams, Peoria 3, Illinois

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TYPE "A"

# The Multiple Life of this CLUTCH HEAD Type "A" Bit . . . unlike the fabled "nine"

of the feline species . . . is definitely beyond all conjecture.

Time, and time, and time again, this tool is fully restored to its original efficiency by a simple 60-second application of the end surface to a grinding wheel.

Each repeated grinding sends it back to the assembly line with a new lease on life . . . to MULTIPLY BY THOUSANDS the number of screws driven per bit.

Here is tool economy that CLUTCH HEAD alone can deliver . . . economy that is unmatched with any other screw on the market.

Here is freedom from the expense, bother, and delay involved in "back-to-the-factory" shipments for reconditioning.

And here, too, is a tool so ruggedly engineered that it stands up through a longer "spell" of continuous driving, free from change-off interruption.

But standardization of your assemblies on CLUTCH HEAD Screws gives you other advantages for faster, smoother, safer, lower cost production:-

- The safety of automatic Center Pivot entry for straight non-slip driving.
- All-square contact for effortless driving with freedom from end pressure to combat ride-out as set up by tapered driving.
- CLUTCH HEAD's positive Lock-On for easy one-handed reaching.
- Simplified field service because CLUTCH HEAD is the only modern screw designed for operation with the ordinary screwdriver.

You are invited to make your own test of these and other exclusive advantages by asking us to mail you



a package assortment of CLUTCH HEAD Screws, sample Type "A" Bit; and fully Illustrated Brochure.







UNITED SCREW AND BOLT CORPORATION CLEVELAND 2 CHICAGO 8 NEW YORK 7

## For Complete Wiring Systems

Flameno!\*
BUILDING WIRE

(Small Diameter — Thermo-plastic Insulated)

This high quality wire was developed before the war. It has proved its worth in thousands of different installations. Choose it for all wiring purposes: new wiring, rewiring and maintenance wiring. Two types are available in sizes 14 to 2,000,000 CM: Type T Flamenol Wire for general purpose wiring, Type TW Flamenol Wire for wiring in wet locations.

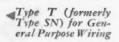
The small diameter of Flamenol Building Wire makes it easy to install and permits more copper to be placed in conduits. Its tough insulation has long life, is high in dielectric and mechanical strength, is flame retarding and is resistant to oils, acids and alkalies. In addition, Type TW Flamenol Wire insulation has low moisture absorption.

#### G-E PORTABLE CORDS

Both Flamenol Cords and Buna Cords are in the G-E cord line. Both are available in three types: heavy duty, medium duty and rip cords for use on lamps and small devices. These cords are mechanically strong, easy to handle, light in weight and flexible.

For Further Information on Flamenol Building Wires or Flamenol or Buna cords or G-E conduits or wiring devices, see the nearest G-E Merchandise Distributor or write to Section CDW 1058-77 Appliance and Merchandise Department, General Electric Company, Bridgeport, Conn.

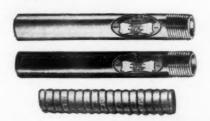
\*Reg. U. S. Pat. Off.





#### G-E CONDUITS AND WIRING DEVICES

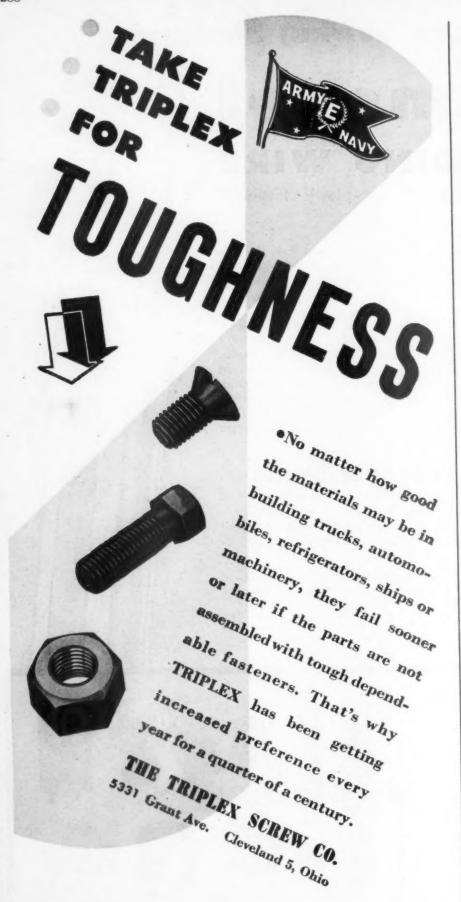
General Electric also offers five conduits and a full line of wiring devices, including: White and Black rigid conduits, EMT, flexible metal conduit, Fiberduct; and switches, lampholders, outlets, fuses, etc.





GENERAL @ ELECTRIC

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THREADED

FASTENERS

CAPAND SET SCREWS - BOLTS, NUTS AND RIVETS

(Continued from page 284)

position. At a testimonial dinner he was presented with an engraved wrist watch by the mining company, and a traveling bag from a group of company officers. Mr. Bjork will continue position as Purchasing Agent for the Castile Mining Co. Ramsay, which he held previous to present appointment.

## AMONG THE COMPANIES YOU BUY FROM

Briggs Clorifier Company, Washington, D. C. Diesel Equipment Company has been named distributor for territory including Western Tennessee, N.E. Arkansas, Sou. Illinois, Sou. Indiana, and Sou. Kentucky. Offices are located at 308 South 2nd Street, Memphis, Tenn. Worthington Brown and Wm. F. Fayown and manage the firm.

Cutler-Hommer, Inc., Milwaukee, Wis., F. A. Wright has been made assistant



general sales manager. Mr. Wright has been associated with the company since

Westinghouse Electric Supply Co., Ft. Worth office. W. E. Knapp, Jr. has been named branch manager to succeed E. C. Cummins, who resigned.

Cleveland Crane & Engineering Company, Wickliffe, Ohio. Charles H. Saiter has



been appointed sales manager in charge of a new sales division known as the Heavy Machine division with headquarters in Wickliffe.

Boker Industrial Truck Division, Baker Raulang Co., Michigan Territory. Lt. Col. H. A. Stevenson, Army Service Forces, has been retired to inactive duty and returned to his former business—sales distribution from his headquarters at 7310 Woodward Ave., Detroit.

(Continued on page 290)

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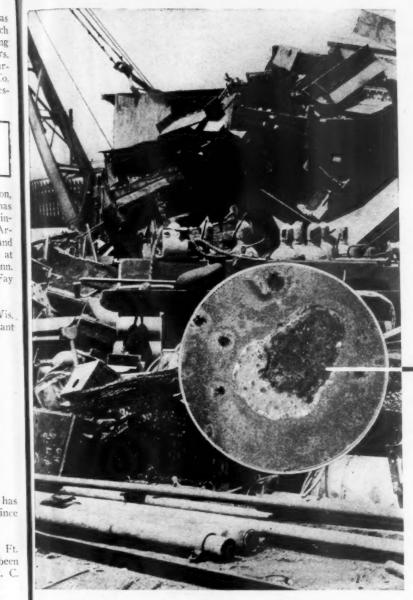
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# You don't need to put up with RUST

RUST COSTS AMERICAN INDUSTRY WELL OVER \$100,000,000 A YEAR!

How much of that sum could you save if rust were eliminated in your plant?

Cities Service Anti-Corrode and Cities Service Rust Remover quickly and safely effect substantial savings...help insure your production.

Cities Service Rust Remover wipes metals clear of rust or tarnish formations. Easy to apply-acts quickly and effectively.

Cities Service Anti-Corrodes prevent rust ... provide safe and durable protection against rust or corrosion. There is a specific Anti-Corrode for every industrial need.

Talk over your rust problems with a Cities Service lubrication engineer and let him suggest methods for their solution. You will benefit immeasurably from his expert knowledge of the subject. Write now or mail the coupon below.

Rust can be eliminated ... and Cities Service can help you.

Mail this Coupon Today...

CITIES	SERVICE	OIL COM	PANY, Ro	om 452	
70 Pine	Street, Nev	V York 5,	New York		
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Gentlemen: Please send full information on Cities Service Rust Prevention Program.

Address

City..... State.....



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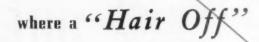




Checking the angle on a cam action form die with a Starrer Beyel Protractor at Curties Wright, Buffalo.



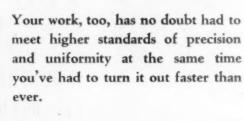
At an American Airlines shop a propeller is being checked by a Starren Micrometer

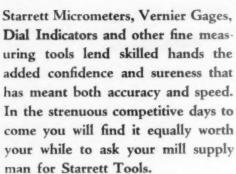


may mean a close shave . . .

## You'll find

### **STARRET TOOLS**







Scarcett Calipers in action at Douglas Aircraft Co.'s Santa Monica plant



Starrest Micrometers speed accuracy at Lockbeed Aircraft Corp., Burbank, Cal

THE L. S. STARRETT CO., ATHOL, MASSACHUSETTS, U. S. A.

World's Greatest Toolmakers

# STARRETT

PRECISION TOOLS . DIAL INDICATORS . GROUND FLAT STOCK HACKSAWS . METAL CUTTING BANDSAWS . STEEL TAPES

(Continued from page 288)

Pittsburgh Plote Gloss Company, New York office. C. E. Seghers has been promoted to director of paint sales of this branch.

Chose Bog Company, Chicago, Ill. W. N. Brock, formerly manager of the Toledo plant, has been promoted to assistant to the general sales manager, R. N. Conners, H. C. Hancock has been named to succeed Mr. Brock as manager at Toledo.

Votator Division of Girdler Corporation, Southeastern district. Lester N. Harri-



son has been made district manager with headquarters in the Johnston Building, Charlotte, North Carolina.

Westinghouse Electric Corporation, East Pittsburgh, Pa. Lloyd A. Russ has been appointed manager of the Agency and Specialties department, succeeding W. S. Trumbull.

Monarch Governor Company, Milwaukee office. D. J. Noland has been appointed district manager, with headquarters at 2101 West Purdue Street.

Joseph T. Ryerson & Son, Inc., Chicago office. R. C. Page and W. A. Redpath



R. C. Page



W. A. Redpath

have been named assistant managers of sales. Mr. Redpath will assist in the promotion of sales in the Chicago City area, with Mr. Page assuming similar responsibilities in the country areas.

Republic Steel Corporation, Cleveland, Ohio. N. J. Clarke, formerly vice-president in charge of sales, has been elected senior vice-president. Mr. Clarke will be succeeded as vice-president in charge of sales by J. M. Schlendorf.

C. M. Holl Lomp Company, Detroit, Mich. Thomas P. Cusack, formerly manager of the Radiair Infra-Red heating equipment division, has been named director of sales promotion and advertising.

(Continued on page 294)

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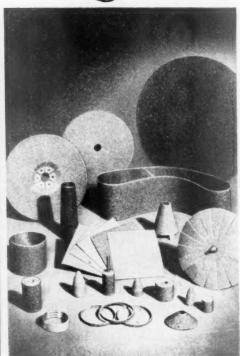
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NOW IT'S EASY TO IDENTIFY
COATED ABRASIVES

BY "CARBORUNDUM"





"CARBORUNDUM" has put its simplified identification system for coated abrasives into effect. Now it is easy to order these products. First the product is called by its right name—the name of the end use. Second that name and the specifications appear on both the package label and the backing material. The man in the shop can easily tell what he is using and requisition more. The stockroom finds it quicker and easier to locate

the requisitioned material. The purchasing department eliminates trouble in duplicating previous orders. For complete information, please

refer to our new, authoritative coated abrasives book. "Sanding & Finishing." If you have not yet received your free copy, please write The Carborundum Company, Niagara Falls, New York.





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# HOW TO GET RID OF AN ALUMINUM FABRICATION PROBLEM

CAN YOU MAKE THIS SPOT
WELDED CONTROL BOX FOR
US? WE DON'T HAVE
THE FACILITIES.

SURE WE CAN. ALUMINUM

SURE WE CAN. ALUMINUM

SPOT WELDING IS RIGHT

DOWN OUR ALLEY. HOW

DOWN DO YOU WEED

SOON DO YOU WEED

DELIVERY?

When you have a job that calls for precision aluminum fabrication, remember that we're set up to provide specialized equipment and manpower on a basis to exactly fit your needs. Take spot welding for example, just one of our many facilities:

We have a battery of machines for this work, with capacities up to 4,000 volts and 3,200 lb. pressures. These machines can handle all alloys of aluminum up to 2 pieces of .125 thickness each. Preparatory cleaning is done by an improved method. Pull and etched tests are made at frequent intervals.

Our 34-year record of satisfactory performance is assurance you'll get what you want, when you want it. We serve many of America's leading manufacturers, and would like nothing better than to have you check with any of them on our ability to "deliver the goods".

Write or phone if you believe we might be able to serve you. We'll appreciate the chance to work with you on your production problems.

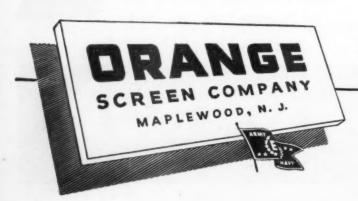


Stamping • Spot Welding • Drawing • Induction Brazing
Forming • Machining • Drilling • Line Assembly • Riveting
Spraying • Gas Welding • Baked Enameling • Tools and Dies

### Write for this booklet today

It describes our facilities in detail, pictures many of the products we make, and explains how the Orange Screen Company can be a profitable cog in your manufacturing program. A request on your company letterhead is sufficient to start the booklet on its way to you.



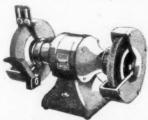


They Do More... Better... Faster

"WHIRLWIND" WIRE
BRUSHES CUT COSTS,
STAND UP LONGER ON
HIGH SPEED WORK



wind Brushes come in 4" to 8" wheel sizes; made of .014" wire for rough cleaning, .0118" wire for high-speed buffing, .005" wire for fine finishing and burnishing.



For Stationary Grinders: Whirlwind Brushes come in three thicknesses, in six wheel sizes from 4" to 12". Can be used on many types of machines. Adaptors fit them to most any arbor or spindle.



Sanders: Whirlwind Wire Cup
Brushes make quick work of removing rust, scale, old paint; cleaning castings, structural metal, tanks, boat hulls, other surfaces. Made in 4", 5" and 6" sizes.

# Trade Mark Reg. U. S. Pat. Off.



EVELOPED and made by Black & Decker for high speed work, Whirlwind Wire Wheel Brushes are definitely better, tougher, work faster and last longer. That's because crimped wire gives Whirlwind Brushes extra life and spring . . . assures correct clearance between wires . . . holds the brush in an even, compact mass. And each individual tuft of wire is held in a ring of steel . . . separately . . . securely . . . to stay. Whirlwind Brushes are available in wheel sizes from 4" to 12" in three thicknesses, and in three gages of

wire . . . for use on almost any grinding, buffing or polishing machine and on all Black & Decker Portable Grinders, Bench Grinders and Sanders. Try Whirlwind Brushes now. Order them from your Black & Decker Distributor. Compare the service and satisfaction Whirlwinds give you with brushes of any other make.

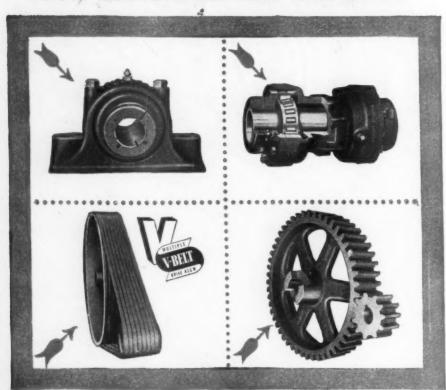
For our complete catalog of more than 100 different Black & Decker Portable Electric Tools and over 1,000 attachments, write to: The Black & Decker Mfg. Co., 664 Pennsylvania Ave., Towson 4, Md.

Black & Decker



... to avoid reconversion headaches!

COMPLETE POWER TRANSMISSION **EQUIPMENT FROM ONE SOURCE** FOR EFFICIENCY AND ECONOMY



### "Patents make Jobs"

- · Shaft Hangers
- · Bicycle Type Sheaves
- . V-Belt Drives
- · Cast Iron Pulleys
- · Steel Rim Pulleys
- . Ring Oiling Bearings
- . Wick Oiling Bearings
- . Belt Tighteners

- · Chain Drives
- . Set Collars
- · Hercules Pulleys
- . Wood Pulleys
- · Shafting
- · Friction Clutches
- · Sprockets
- e Pattern Work
- . Rigid Shaft Couplings
- Flexible Shaft Couplings
- . Universal Shaft Couplings
- Medart-Timken-Bearings
- Iron & Semi-Steel Castings
- Wire Rope Sheaves
- Cut Tooth Gearing
- Molded Tooth Gegring

THE MEDART COMPANY .

(Continued from page 290)

Graybar Electric Company, Akron, Ohio office. H. M. Nazor has taken over the active management of the branch. K. B. Mayer until recently, manager at Akron has been transferred to Chicago where he will supervise Rural Lines Department activities.

Joseph T. Ryerson & Son, Cincinnati plant. Wayne Dukette has been advanced to



position of manager of the Cincinnati Steel-service plant. He has been associted with the company for thirty-one years, and succeeds D. L. McCubbin, deceased.

Firth-Sterling Steel Company, McKeesport, Pa. Lloyd R. Clowes, Pittsburgh district sales manager, has been appointed assistant general sales manager of the com-

Continental Can Company, Houston plant. Headquarters of New Orleans-Houston customer research district have been changed from New Orleans to Houston, P. O. Box 1007, 105 North Greenwood Street. R. G. Stevens is chief of this district.

DoAll Company, Des Plaines, Ill. E. R. Haan has been made director of adver-



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tising. For many years, Mr. Haan was technical editor of Popular Mechanics magazine.

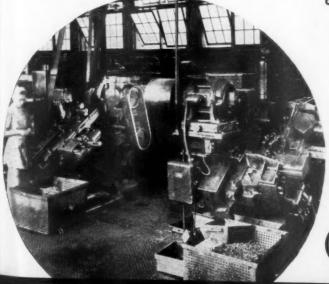
Continental Can Company, Inc., Michigan area. V. A. Leslie, formerly state supervisor of the company's cannery equipment service, has been named sales representative to succeed L. J. Wing, who resigned after thirty-one years to enter the canning business of the J. H. Thurma Company at Owosso, Michigan.

(Continued on page 296)



This little bolt does a big job in the compressor unit of a famous electric refrigerator.

Once it was a problem child because it had to be machined individually from bar stock. Now
Buffalo Bolt engineers have devised a process of shaping it out of drawn wire and threading
it in a single, fast and economical operation. Another example
of the versatility of our modern equipment.



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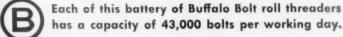
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# BUFFALO BOLT

COMPANY

NORTH TONAWANDA, NEW YORK SALES OFFICES IN PRINCIPAL CITIES



Остов



# GRIFFIN Soft Center

HARD-TEMPERED along the back — for reserve strength and stiffness where needed. Softer-but TOUGH through the center, for flexibility and break-resistance. Extra hard teeth-for sure cutting and long service. A manypurpose hand blade developed exclusively by Griffin to cover widest possible range of uses.

## Other Special Griffin Blades

GRIFFIN HIGH SPEED STEEL - For toughest alloys. Hand and power sizes.

GRIFFIN MOLYBDENUM HIGH SPEED-For low-cost cutting of all but very hardest alloys. Power and hand sizes.

GRIFFIN NON-STRIP-Economical hand blade that cuts thinnest sheet or tube without tooth breakage.

Your local Griffin distributor will supply you. If you've a specially difficult cutting problem, consult us - without obligation . . . Write for FREE Griffin Blade folder.

General Sales Agent

JOHN H. GRAHAM & CO. Inc. 105 Duane St., New York 8, N. Y.



(Continued from page 294)

Celanese Corporation of America, New York. H. C. Van Brederode and J. P. Holmes have been elected vice presidents of Celanese Company, Inc., a subsidiary. Mr. Van Brederode had been sales manager of the fabric division of Celanese Corporation, and Mr. Holmes had been in charge of the warp knit division.

Cooper-Bessemer Corp., Mount Vernon, Ohio. S. E. Johnson, general sales mana-





S. E. Johnson

C. G. Cooper

ger has been elected a vice-president and member of the board of directors, and C. G. Cooper manager of the Washington office also has been elected to membership on the board.

Detroit Seamless Steel Tubes Co., Detroit, Mich. J. J. Kraus has been appointed sales vice-president, after having served in the military service since 1942. Mr. Kraus succeeds C. H. Hobbs, resigned.

Lincoln Electric Co., St. Louis office, B. J. Brugge has been named welding engineer and district manager of sales of the newly opened factory branch sales office at 4427 Manchester Avenue.

Heppenstall Co., Detroit, Mich. R. K. Carson has been made sales engineer to succeed J. C. Patton, Jr., who recently became sales representative in Chicago.

Operadio Manufacturing Co., Michigan-Ohio territory. C. H. Carey has re-



cently joined the staff as sales engineer. His headquarters will be in Cleveland.

Westinghouse Electric Corp., Huntington, West Va. H. E. MacArthur has been appointed manager of the manufacturing and repaid department.

Westinghouse Lump Division, St. Louis office. Frank C. Cline has been appointed acting manager of the Southwestern district. To succeed Mr. Cline as special representative in Chicago, G. S. Crawford has been appointed.

Westinghouse Lamp Division, Northwestern district. E. H. Frank has been transferred from Pittsburgh to Chicago as office manager. Mr. Frank succeeds George A. Olsen.

Watson-Stillman Company, Roselle, N. J. J. S. Wilson has been advanced to manager of plastics equipment sales. He is recognized as an authority on all phases of plastic molding.

Allis-Chalmers Manufacturing Company Pittsburgh office. Robert V. Lackner has



been named field engineer to service the steel and alloy industries in the Pittsburgh area

Zenith Carburetor division of Bendix Aviation Corporation, Detroit, Mich. F. E. Williams has been promoted to general sales manager, and C. E. Sexauer has been made service manager.

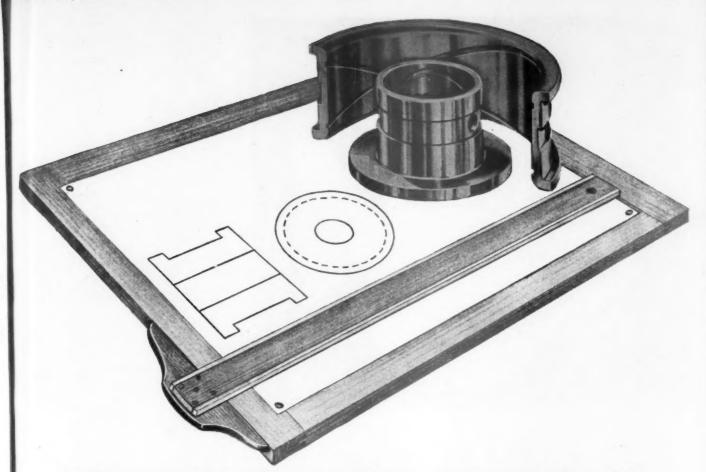
(Continued on page 298)



To predetermine, accurately, the ability of cartons and containers to withstand shipping stresses requires more than just mechanically precise equipment. Certain tests, such as for ply separation (shown above), call for skillfully trained hands. Our engineers helped develop specifications for the famous wartime V-boxes. To understand how container-testing can help solve your shipping problems, write for our new booklet "V-Boxes".

CONTAINER TESTING LABORATORIES, INC. 45 East 22nd Street, New York 10, N. Y. NEW YORK . CHICAGO . SAN FRANCISCO Tod the on sta

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# SHOOK BRONZE BEARINGS

# deliver planned performance

Today drafting boards are pouring out designs for the improved products of tomorrow. They look good on paper . . . sure . . . but, will they work? Will they stand up?

Take bearings, for example. "Bugs" can develop when you get in production. Are your specifications correct? And, if they are, will the bearings be made to your requirements . . . and on time?

One way to make sure of satisfactory performance is to look to Shook for your bearing needs. Since 1916, Shook has been delivering bronze bearings that more than meet the most exacting requirements. Shook has the "know how", and the production capacity to furnish any type of bearing, in any quantity, made either of long-wearing Shook 664 phosphor bronze or any standard alloy.

### PEACETIME PLANNERS...write for Shook Catalog No. 45

This informative catalog gives full data on Shook flanged and plain bushings, shows how to order grooving, tells how to take advantage of our engineering assistance... also, lists Shook babbitt metals. Write for it today!



Shook BUSHINGS BAR STOCK BABBITTS
BRONZE CORP.
GREENLAWN AND LAKE STREETS LIMA, OHIO



## You get **FIVE** Big Opportunities to Better Plant, Product and Profits when You Call in the **CHAMPION** Lighting Engineers

The makers of CHAMPION Fluorescent and Incandescent Lamps offer you a complete and unbiased consulting engineering service on industrial and office lighting without charge or obligation.

As one of the largest and longest established producers of fine quality lamps, we present this service in recognition of the importance of good industrial lighting on these five counts:

- 1. Quality of Production—more accurate work, better inspection and supervision
- 2. Quantity of Production—increased working efficiency sustained over longer periods
- **3. Economy of Production**—greatly reduced spoilage and better use of space
- Improved Health and Safety reduced eyestrain, conserved nervous energy, sharply diminished accident hazards
- 5. Improved Morale better seeing eliminates strain, makes work more pleasant as well as more efficient, decreases labor turnover

For competent counsel on how to secure any or all of these five benefits from better lighting, get in touch with

CHAMPION LAMP WORKS

Lynn, Massachusetts

A DIVISION OF CONSOLIDATED ELECTRIC LAMP CO.

(Continued from page 296)

B. F. Goodrich Company, Industrial Products Sales division. J. F. Failey has been named New York assistant district manager; R. G. Cox has been appointed manager of lathe cut, molded and extruded goods sales; and G. J. Fischer has been manager of the hose department.

Ceco Steel Products Corporation, Cicero,



Ill. plant. W. E. Zipp has been appointed vice-president in charge of sales for the manufacturing division.

Chicago Steel Service Company Chicago, Ill. Otto F. Seidenbecker, formerly vice-president of the Wisconsin Steel Company, has become associated with Chicago Steel as assistant to W. D. Monroe, president. Mr. Seidenbecker will be located in the recently opened downtown office in the McCormick Building, 332 South Michigan Ave.

Pittsburgh Plate Glass Company Augusta, Ga. branch. W. F. Gordon has been appointed manager to succeed C. V. Bailey, who has been named paint department manager at the Atlanta branch.

R-S Products Corporation Industrial Heat Treating Furnace Division, Philadelphia, Pa. F. J. Schuman, Plant Engineering & Sales Co., 117 West Ninth Street, Los Angeles, Calif., has been appointed district representative.

Allis-Chalmers, Chattanooga office. J. W.



Roberts has been named branch manager. He joined the Atlanta District office in 1941.

Foxboro Company, New York office. C. L. Williams has joined the staff of sales engineers whose headquarters are at 420 Lexington Ave. He has been assigned to the northern New Jersey territory.

(Continued on page 302)

# YOU, TOO, WILL LIKE 'EM



# Billings WRENCHES

The men using Billings Wrenches everyday on tough assembly jobs and rugged maintenance work like the design, the balance, yes, the "feel" of these tools in their hands. They say, "Billings Tools have the stuff!" . . . Try them!



TOOL CRAFTSMEN SINCE 1869

YOU CAN RELY ON Billings

**BUY BILLINGS TOOLS FROM** 

THE BILLINGS & SPENCER CO. HARTFORD 6, CONN., U.S.A.

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Diving around for better product?

(Can you name the plastic parts that make up this diver? See chart below.)

> your needs. We'll tell you frankly whether plastics will meet your requirements best.

You'd be surprised by the long list of plastic products now made by Continental. They're the result of combining long designing experience and engineering "know-how" with increased production resources and facilities. This combination assures satisfaction for you in developing and improving your products.

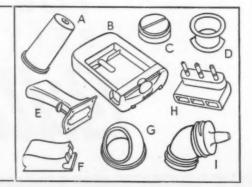
Tune in: "REPORT TO THE NATION" every week over coast-to-coast CBS Network

If you're really going overboard to develop better products, take some useful tips from this diver. He's made from nine different

plastic products, all manufactured in Continental Can Company's plastics plant at Cambridge, Ohio. Our diver's body is a billing machine housing; his legs, two sales-ticket holders; his feet, two loudspeaker trigger handles; his head, a mouthpiece.

This diver shows that plastics are ideal for certain uses and our designing and engineering departments will be glad to analyze

> (A) Mouthpiece; (B) Brush cap for motor; (C) Collar; (D) Billing machine housing; (E) Terminal connector; (F) Trigger for gun handle; (G) Nozzle for intravenous bottle; (H) Sales-ticket holder; (1) Loudspeaker trigger handle-all made by compression process.



CONTINENTAL

COMPANY, INC.

BQUARTERS: Cambridge, Ohio Sales Representatives in all Principal Cities

COMPRESSION - INJECTION - EXTRUSION SHEET FORMING - LAMINATION

OTHER CONTINENTAL PRODUCTS: Metal Containers . Fibre Drums • Paper Cups • Plastic Products • Crown Caps and Cork Products . Machinery and Equipment.



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## SNAP-ON WRENCHES . . . INDUSTRY'S STANDARD FOR PRODUCTION, ASSEMBLY, MAINTENANCE



Fibre Caps

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### This New Name

# Vulcanized Rubber and Plastics Company

(formerly The Vulcanized Rubber Company)

means new and improved services for volume users of hard rubber. soft rubber and molded plastic parts and products.

With the expansion of the Plastic Division, our research, engineering and manufacturing facilities are available to help manufacturers and fabricators overcome their experimental and production problems on plastics as well as hard and soft rubber.

Which is the best material for your part or product?

PLASTICS?

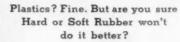
HARD RUBBER?

SOFT RUBBER?

WHAT COMPOUND?

The chemical and physical properties of a material affect a product from design to actual performance. New plastics are constantly emerging. The properties of plastics such as Cellulose Acetates, Acrylics, Phenolics, Polystyrene and Vinyls, for instance, differ a great deal. Research on rubber is continuing and new synthetic rubber formulas are being developed. When natural rubber returns, we will have a greater range of compounds.

The material that is best for your part or product depends on the job it has to do. A certain type of plastic, or formula of hard . or soft rubber; a metal or a combination may be the best answer.



Just as it made sense for us, with our molding experience, to go into the new plastics, it also made sense to continue our research and fabricating on the older plastics . . . hard and soft rubber. In many applications they work far better than any of the newer plastics, particularly where dimensional stability in the presence of heat, moisture and solvents is a requirement.

### It might pay us both to get together

We have the chemical and physical research and testing laboratories to help you find the right material. And we have over 60 years experience in fabricating molded forms, starting with hard rubber, one of the first plastics.

Just tell us where and how your part or product has to go to work, or give us the specifications. If we should find that the part or product doesn't belong, economically or physically, in any one of the wide range of plastics, hard rubber, soft rubber, or molding methods that we are set up to handle, we will frankly say so and recommend what we think is best.



### CHEMICAL RESEARCH, TESTING AND QUALITY CONTROL

This modern laboratory is at the disposal of our trained staff to help you select the right material and control the quality of your part or product.



completely equipped physical testing laboratory checks your product from design to performance requirements.

### VULCANIZED RUBBER AND PLASTICS COMPANY

formerly . . . The Vulcanized Rubber Company

Manufacturers of Rubber and Molders of Plastics

General Offices: 261 Fifth Avenue, New York 16, New York.

Works: Morrisville, Penna

### INDUSTRIAL DEVELOPMENTS

American-Marietta Company has purchased the Schorn Paint Manufacturing Co. and Solastic Products Co. of Seattle, Wash. Schorn company makes consumer paint products. Solastic organization makes industrial and marine finishes. No major change in personnel or policy will be made. American-Marietta Company acquired the Ottawa Paint Works, Ltd., Ottawa, Canada in May, and the Sewall Paint & Varnish Co. in Kansas City and Dallas twelve months before. It will now operate ten modern manufacturing plants.

A. C. Horn Company, Long Island City, N. Y. has been consolidated with the General Printing Ink Corp., and is now known as a division of that company, The Horn Company manufactures protective and decorative coatings.

Emerson Electric Manufacturing Co., St. Louis, Mo. Oscar C. Schmitt succeeds W. Stuart Symington as president. Mr. Symington has been made Chairman of



Oscar C. Schmitt President, Emerson Electric Mfg. Co.

the Surplus Property Board, Washington. Mr. Schmitt started with the company in a minor capacity in the advertising department in 1910 and has successively held almost every major post in advertising, sales promotion, sales and executive management.

The Aviation Corp., New York, N. Y. has acquired controlling interest in the Crosley Corp., Cincinnati, Ohio. Checks covering the transaction totalled over \$12,-000,000. Ayco's total commitments in the deal are said to be over \$21,000,000.

Monsonto Chemical Co., through its Seattle subsidiary, I. F. Laucks, Inc., has purchased about 29 acres of land south of city limits of Seattle for the construction of modern plywood adhesives plant for the production of synthetic resins for adhesives, and coatings and wood preservatives now made in the two Laucks

Asa S. Cook Company, wood screw machinery : manufacturers, New Haven, Conn., has moved its equipment from New Haven to the enlarged plant of the Standard Machinery Co., 1475 Elmwood

(Continued on page 304)

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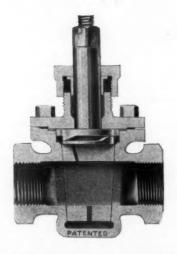
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Sectional View (Open Position) Showing Protected Seating Surfaces, Straight-Line Fluid Flow and Rugged Valve Construction.

For quick, positive control in the handling of air, water, gas, oil and other fluids, HOMESTEAD QUARTER-TURN VALVES are unsurpassed. They act quickly and positively because a simple quarter-turn fully opens or closes the valve, and the patented Homestead cam holds seating surfaces in contact at all times, yet permits easy turning.

When the operating handle is moved to the closed position, the cam surfaces come into contact automatically, thus pressing seating surfaces together to form a "drop-tight" seal. When the handle is turned to the open position, pressure on the cam surfaces is relieved, permitting the plug to turn freely through 90 degrees to a positive stop in the full-open position.

Straight, unobstructed fluid passage, assures "full flow" and minimum drop in line pressure. And because seating surfaces are protected in both open and closed positions, corrosive fluids and grit cannot damage or cause valve failure. Add to these important features the rugged construction characteristic of all HOMESTEAD VALVES and you have the reason why hundreds of users in all types of industry specify HOMESTEAD QUARTER-TURN VALVES for long, trouble-free, low cost service.

HOMESTEAD QUARTER-TURN VALVES are made in sizes, types and metals for most of your valve needs; for pressures to 3000 pounds and temperatures to 750 degrees F. Our engineering department will design special valves to your own specifications. Write for Valve Reference Book No. 38.



HOMESTEAD VALVE MFG. CO.

P. O. BOX 93

CORAOPOLIS, PENNSYLVANIA



### . . and Step Up Your Production!

Slowdowns, injuries, rejects-all can be caused by vises that don't hold in the pinch. Get Parkers - product of a century of knowhow. These vises have pinnedon renewable steel jaws, many

another feature that keeps production rolling. Built to stand the gaff, they're backed by America's first vise-maker. See your distributor. The Charles Parker Co., Meriden, Conn.





DAMP or Wet working conditions are critical occupational hazards that seriously cut down the efficiency of workers. Eliminate these hazards. Give

complete protection against natural or industrial moisture through the use of Frog Brand Protective Work Clothing by Sawyer. Write for details regarding Frog Brand slickers, jackets, pants and hats.

THE H. M. SAWYER & SON CO.

East Cambridge, Mass.

(Continued from page 302)

Ave., Providence, R. I. Announcement is made of the election of Robert F. Moyer of Rumford, R. I. as president and treasurer, and Arvid N. Larson as general manager to succeed R. S. Crosby manager of the Cook Company for the past 47 years who will continue as consultant. Line of production includes automatic shavers and slotters, die headers, pointing and slotting machines, bolt and nut assembling machines, and others.

Continental Can Company. Plans have been completed for two new buildings to be added to the Container Company plant at Van Wert, Ohio. One is 142,500 sq. ft. factory building, and new research and engineering building 66 x 81 consisting of two floors and basement. Construction contracts have also been placed by the Container Co., a division of Continental, for an addition to the Reading, Pa., plant which will double present operations.

Portable Products Corp., announces the appointment of E. D. Wacker as general manager of its C. J. Tagliabue Division, Brooklyn, N. Y. Mr. Wacker for the



E. S. Wacker

last eight years has been general sales manager, and associated with C. J. Tagliabue for period of 22 years. The Tagliabue Division makes indicating, recording and controlling temperature instruments as well as those used for pressure, level and flow.

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Industrial Tape Corp., New Brunswick, N. J., announces the formation of an Adhesive Cement Division for producing and servicing a line of rubber-based and resin-based cements for use in bonding and combining rubber, metals, plastics, textiles, wood, leather and glass.

Rustless Iron and Steel Corp., Baltimore, Md., announces building program involving a series of five building projects to cost approximately \$2,440,000. The five projects include (1) relocation and improvement of present hot rolling facilities, (2) rearrangement and enlargement of the cold rolled shape mills, (3) fivebay addition to the inspection and shipping department, (4) revamping of power sub-station and installation of additional electrical switch gear, and (5) installation of new water-reclaming system.

Worthington Pump & Machinery Corp., Harrison, N. J., announces plans to turn a large part of the heavy ordnance manu-

(Continued on page 308)

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The cup-shaped aluminum component for airborne radar, spotlighted above, required more uniformity and strength in its walls than could be obtained by machining the part out of bar stock. Although forging such a deep cavity to meet specifications was a difficult problem, Scovill devised a way to do it.

Much less difficult was the leaded bronze gear forging used in telephones; but the way Scovill extrudes the shaft required specialized knowledge of the trade. Whether your problems in metal parts production are easy or difficult, the chances are that Scovill can make your components equally good at lower cost or considerably better at your present price. Scovill's record with more than 3,000 firms proves that.

Scovill's long experience in forging all kinds of metal plus ingenious designing and die-making all add up to the most practical solution of your production problems. For further evidence of Scovill's ability you'll want to read the free booklet "Masters of Metal". Fill in the coupon below and mail it today.

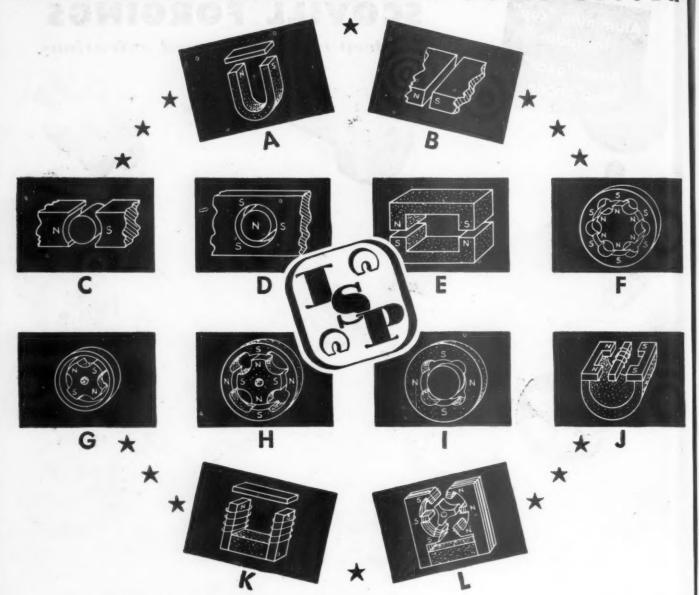


Please send me a free copy of "Masters of Metal" booklet describing your facilities. I am interested in the metal forgings applications checked.

Valves, Torch Heads, Regulators, for compressed gas cyl-
inders, Welding and Blow Torches, etc. Household Appli-
ance Parts Plumbing Goods (valves, etc.) Industrial
Instrument Parts Aircraft Parts Communications Equip-
ment Parts General Electrical Product Parts Fire Extin-
guishers Cameras Oil Burners Band Instruments
Other applications

### SCOVILL MANUFACTURING COMPANY

Forgings Division 21 Mill Street, Waterbury 91, Connecticut	
Name	***************************************
Company	
Address	



## **Basic Types of Air Gaps**

The space required for a magnetic field is known as an "air gap." Most of the fundamental types of air gaps are illustrated above—from the familiar form shown in "A," which is simply a permanent magnet with an armature adjacent to the poles of the magnet, to the inductor type alternator such as type "L."

The basic forms of permanent magnets and their associated air gaps are subject to infinite variations. They are used in a rapidly growing number of applications...potentially, there are unlimited uses for permanent magnets as yet undiscovered.

In specializing in permanent magnets since 1910, we have discovered and engineered many advances in magnetic technology with the result that this company is now the largest in the

country manufacturing permanent magnets exclusively.

If you are making products which might function better through the employment of magnetic energy, our engineers will be pleased to consult with you. Write for complete information. Ask for a copy of "Permanent Magnets Have Four Major Jobs."

6 NORTH MICHIGAN CHICAGO 2, ILLINOIS



Specialists in Permanent Magnets Since 1910

# "GREENFIELD MAN" SHOWS HOW A GTD SHOW-HOW REPORT

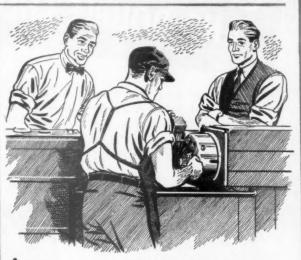
A "Greenfield Man" on a routine service call at a large plant in New York State was told by the Tool Supervisor that they had to finish threading a certain part by hand because the threading operation on the turret lathe was producing tapered threads. "It is a major headache," said he.



2 "That looks like a 'natural' for one of our 'Acorn' Dies," said the "Greenfield Man". He located an "Acorn" Die Releasing Type Holder in another department which he adapted to fit turret of machine by having shank ground down from %" to %".

3 While shank of holder was being adapted to fit turret, the "Greenfield Man" phoned local "Greenfield" Distributor and asked him to send over two "Acorn" Dies from the distributor's stock right





4 Before the "Greenfield Man" left the plant, this emergency "Acorn" Die set up was running smoothly producing perfect threads, and an order was placed for the correct size holder

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1910

A needless operation was eliminated. Production time was cut to a fraction and a serious bottle-neck elim-

inated. Value of on the spot show-how service by "Greenfield Man" and quick delivery from stocking "Greenfield" Distributor was dem-

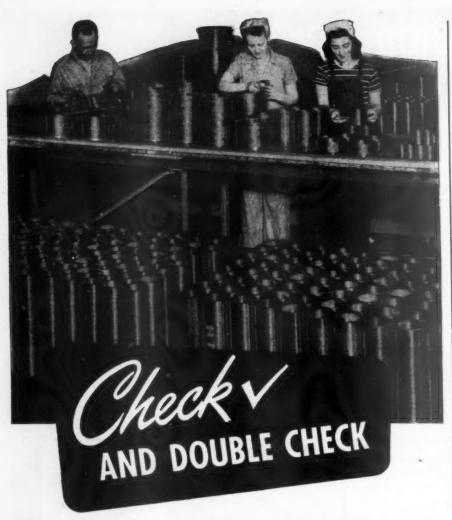
Greenfield's SHOW-HOW is KNOW-HOW in action! onstrated.

ON THREADING PROBLEMS SIMPLY CALL YOUR "GREENFIELD MAN" THROUGH YOUR "GREENFIELD" DISTRIBUTOR!



GREENFIELD TAP and DIE CORPORATION

Остов



DESTINED to help keep American Airmen aloft and fighting... the bronze parts you see above must pass the height of painstaking inspection. They must be precise... flawless... strong!

These and thousands of other parts, large and small, are proving the wisdom of specifying "Shenango-Penn", where tubular parts are cast centrifugally and are precisely finished on modern machine tools.

Shenango-Penn's centrifugal process gives castings a head start—greater density, more uniform grain structure, higher tensile strength, less porosity, no blowholes. No wonder they pass inspection with a very minimum of rejection and are better able to cope with shock, stress, wear and every kind of punishment.

Bulletin 143 will give you complete data including alloy specifications, physical and chemical properties, and reasons why Shenango-Penn castings conserve metal and machining time. Write to Shenango-Penn Mold Company, 2455 West Third Street, Dover, Ohio.



Data Bulletin 143 is yo free for the asking.

PENN
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ALL BROWN
MONEL MI
- ALLOY ID

(Continued from page 304)

facturing facilities of its Holyoke, Mass, plant into production of air conditioning and refrigeration equipment. Facilities for the operation have been moved there from the Harrison plant. Heavy industrial equipment is still being made in Harrison. W. F. Bishop, assistant manager of the division, will be in charge at Holyoke.

Globe Products Manufacturing Co., Los Angeles, Calif., has purchased the machine tool division of the Clayton Manufacturing Co. of Alhambra, Calif. The Globe line now includes boring bar holder and accessories, hand screw machines, bed turrets, cross slides, vises, millers, milling dogs, arbors, holding fixtures and other tools.

Hercules Powder Co., Wilmington, Del. John J. B. Fulenwider has been made general manager of the Cellulose Products Department, and J. B. Johnson general manager of the Explosives Department. They fill vacancies caused by the election of Wm. R. Ellis, general manager of the Explosives Dept., and Mahlon G. Milliken, general manager of the Cellulose Products Department, to the posts of vice president.

### WILLIAM F. COSTELLO

William F. Costello, a director of the New Britain Machine Co., New Britain, Conn., and vice president in charge of wrench sales, was stricken with a heart attack while having dinner with several of his associates at the Hotel Sheraton in New Britain, the latter part of July. He joined the staff of the New Britain Machine Co. in 1927. When the U. S.



entered the first World War in 1917 he enlisted as a private in the aviation section, then part of the Signal Corps, and was later commissioned a second lieutenant and transferred to the Ordnance Department, Raritan Arsenal, New Jersey. At the outbreak of World War II he was granted a leave of absence from the New Britain Machine Co., and became Deputy District Chief of the Hartford Ordnance District, one of five administrative assistants to act as an Advisory board to assist the expanding procurement program. In recognition of his services he was awarded a special citation by the Springfield Ordnance District. He retired from the Army about a year ago with the rank of Lieutenant Colonel and rejoined the New Britain Executive Staff. Sill cop

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# eakproof SILBRAZ joints

IN COPPER OR BRASS

# with WALSEAL\* fittings, flanges, valves



LISEAL UNION



WALSEAL 90° ELBOW



WALSEAL Y BRANCH



WALSEAL TEE



WALSEAL FLANGE



WALSEAL GLOBE VALVE



WALSEAL CROSS



WALSEAL OPEN RETURN BEND



WALSEAL COUPLING

This illustration shows only a few of the many Walseal valves, fittings, and flanges made by Walworth.

Silbraz joints are the strongest joints that can be made on brass or copper pipe or tubing They cannot creep or pull apart under any temperature or pressure which the pipe or tubing itself can safely withstand.

Silbraz joints are easily made with an oxyacetylene torch. When alterations to the line are necessary, Silbraz joints can be taken apart by reheating with the torch The Walseal valves or fittings used for making Silbraz joints may be re-used in the same or a new position. Enough alloy usually remains in the insert groove of the valve or fitting to permit a second Silbraz joint to be made, without the necessity of inserting additional allow.

Walseal valves, fittings, and flanges for making Silbraz joints are a modern development of the Walworth Company - manufacturers of valves and pipe fittings for more than a century. For detailed information about Walseal products, write for Circular 84. For information on Walworth's complete line of valves, fittings, pipe, and pipe wrenches write on your company letterhead for a free copy of Catalog 42

\* Registered trade marks



BOSTON WORKS KEWANEE WORKS

# WALWORTH valves and fittings

60 East 42d Street, New York 17, N.Y. ISTRIBUTORS IN PRINCIPAL CENTERS

### **One-Piece PIPE LINES**



The above illustrates the details of a Walseal tee and Silbruz joints. The center port has been cut away to show the ring of silver brazing alloy which is inserted by the manufacturer in the ports of every Walseal product

The right-hand port has been cut away to show the penetration of the alloy after the pipe and fitting have been silver brazed.

The left side of the tee shows the fillet of silver brazing alloy which completely encircles the pipe at the juncture of pipe and fitting indicating that the Silbrax joint is completed. Because the brazing alloy penetrates both pipe and fitting, the resulting Silbraz joint actually makes the pipe and fitting into a one-piece pipe line.



knocked Japan right out of the war also created turmoil within our business structure—with the countless problems attendant on suddenly bringing out new and improved peacetime products.

It's reassuring to know that SUPERSTRONG takes care of that tough problem of packing and shipping. SUPERSTRONG boxes and crates-"Bound With Steel"-are individually designed by our engineering department to give maximum protection to your product at minimum cost.

For good packaging, the answer is still SUPERSTRONG.

Write for our free booklet-"YOUR PRODUCT . . . how to ship it."



RATHBORNE, HAIR AND RIDGWAY COMPANY 1440 WEST 21st PLACE . CHICAGO 8, ILLINOIS

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# SYLVANIA NEWS

INDUSTRIAL EDITION

OCTOBER

Published by SYLVANIA ELECTRIC PRODUCTS INC., Salem, Mass.

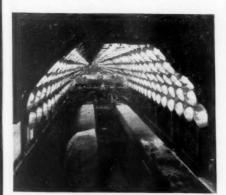
1945

### MANY NEW USES FOUND FOR INFRA-RED LAMPS

Aircraft, Ceramic, Food and Other Industries Use Lamps

Infra-Red lamps are now at work in such jobs as the baking of enameled fine wire and drying the paint on jeeps; dehydrating food, textiles, ceramics, aircraft fittings and wallpaper; preheating heavy castings and tooth paste tubes.

In one installation the radiant heat from these lamps dried the paint on tanks in four minutes. In the manufacture of plastic helmet liners for the Army, drying by the Infra-Red lamp method reduced drying time from an estimated 15 minutes to 55 seconds.



Infra-Red Lamps being used to dry the painted chassis of a jeep, in a Fostoria Pressed Steel drying tunnel.

In food dehydration, Infra-Red reflector lamps can dry food in 5 to 30 minutes as compared to 30 hours previously required.

There are thousands of other applications for these remarkable lamps and they are finding wider use every day. The efficient use of power and space, ease of control and saving of time are but some of the many advantages in treating products with radiant heat.

# SYLVANIA MAKES LIGHT BULBS FOR MANY TYPES OF EQUIPMENT

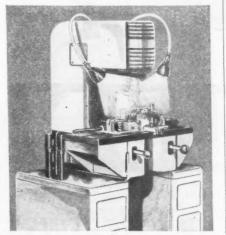
Standard Line Includes Bulbs For Wide Variety Of Manufactured Products

Besides the regular line of frosted and clear electric light bulbs for general lighting, Sylvania Electric produces a line of special lamps for incorporation in various types of equipment. These lamps are used in industry both as parts

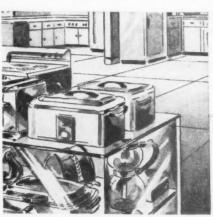
of manufactured products and as the sources of light in equipment used by

industry.

The range of wattages, voltages. bases, bulb shapes, filament types and lumen ratings available is so wide that almost any requirement for equipment lamps can be met from the regular list. Many of these lamps stand out as integral parts of equipment, due to their actual design for the equipment, or ready adaptability to it. They will all provide the best in quality and performance for their particular purpose - whether it is for rough or vibration service, operation under high or low ambient temperatures or to provide a special quality, quantity or distribution of light.



In industry: Sylvania special purpose lamps light machines, signal panels.



In business: spotlights, showcases, elevators, use Sylvania special lamps.



Consumer products—vacuum cleaners, stoves, refrigerators—have their own lighting needs.

SYLVANIA FELECTRIC

MAKERS OF FLUORESCENT LAMPS, FIXTURES, WIRING DEVICES; ELECTRIC LIGHT BULBS; RADIO TUBES; CATHODE RAY TUBES; ELECTRONIC DEVICES

### WPB-OPA DIGEST

A. H. Moron, Machinery Branch Price Executive—Appointment of Arthur H. Moran of New York City, as price executive of the Machinery Price Branch of OPA was announced by Director John S. Clement of the agency's Industrial Manufacturing Price Division.

Paperboard Products—WPB—All quantity restrictions on the manufacture of a large variety of converted paper and paperboard products, including a number of industrial, commercial and household papers in short supply, have been removed.

Orchids for Paperboard Industry—WPB—WPB commended the containerboard industry as "an outstanding example of industrial ingenuity and cooperation in meeting the overwhelming military and civilian requirements for heavy fiber shipping and packaging materials during the war in the face of serious manpower and pulp shortages."

Concel Most Order Ratings-WPB-WPB has announced the cancellation of virtually all allotments of controlled materials and all preference ratings assigned by the Army, Navy or U. S. Maritime Commission except the new MM "military" rating and AAA ratings.

Book Poper-WPB-Under amendment to WPB's Books and Booklets Limitation Order L-245, publishers using more than 100 tons of paper a year are permitted to increase their annual consumption quotas from 77½ to 80 percent of their annual base tomage.

Ceilings on Kroft Poper Products—OPA—Manufacturers' ceiling prices have been established on an f.o.b. mill basis for Kraft wrapping papers, bag papers and Kraft paper bags when sold to the armed forces. (Amendment 12 to MPR No. 182, effective August 22.)

Yellow Cypress Ceilings Roised—OPA—An increase of about seven percent in mill ceiling prices for yellow cypress lumber is announced. (Amendment No. 19 to Revised Maximum Price Regulation No. 97; Amendment No. 21 to Maximum Price Regulation No. 146; Revocation of Maximum Price Regulation No. 513.)

Cost Tube Radiation Ceilings—OPA—An increase of about 8½ per cent in manufacturers' ceiling prices for cast iron tube radiation is announced. (Amendment No. 5 to Maximum Price Regulation No. 272).

WBP Inventory Control—WPB—As a part of its policy to retain all controls necessary to assist orderly and equitable reconversion, WPB has issued a new inventory control regulation embodying all previous WPB inventory restrictions and designed to protect all business (Continued on page 316)



# ALLEN

PRESSUR-FORMD

## SOCKET HEAD CAP SCREWS

Note the true, sharp outlines of socket walls, — so accurately shaped that the hexagon key bears evenly and equally on all surfaces. So the key snugly "bottoms" in the hole; no rocking, no wrench-play.

Could you see through into the metal structure you would find that the steel-fibres conform to the shape of the head. Formerly and by other processes, the steel-fibres were cut under the head, weakening the socket-head at the very focus of torsional and right-angle strain.

Could you see microscopically, you would also perceive that the ends of the steel-fibres turn in toward the socket. These butt-ends impose still more resistance to key pressure.

Add to these features for powerful set-ups the HOLDING-POWER of precision pressur-formd threads, accurate to a high Class 3 fit... Then call your local Allen Distributor who has the only line of socket screws that incorporates all these strong-points.

THE ALLEN MANUFACTURING COMPANY
HARTFORD 1, . . . CONNECTICUT, U. S. A.

# DIAMOND MULTI\_CLAMP



The Clamp
of a thousand uses...

Here's a new clamp that meets the needs of many industries . . . a clamp that solves scores of problems quickly and economically!

The new Diamond G MULTI-CLAMP instantly FITS and HOLDS rubber hosing, metal pipe, tubing, cables and other equipment in a vise-like grip. No wrench, no screw-driver, no disassembling necessary. The patented worm-type self-locking screw assures uniform instant adjustment. Each standard MULTI-CLAMP covers a wide range of sizes and adjustments. Continuous "gear-action" solid band prevents leakage or unequal pressure at any point!

The Diamond G MULTI-CLAMP is corrosive-resistant and meets current Army-Navy specifications. It can be used repeatedly and is practically indestructible. Mechanically held and securely welded . . . a double safety feature! For special purposes, various types of inserts, extra wide bands of metal, plastic or rubber are available.

See the MULTI-CLAMP in action . . . for automotive, aviation, railroad, marine, electrical, hydraulic, pneumatic, electronic, household use and general plant applications. Sample on request.

GEORGE K. GARRETT CO., INC.



Easy to Install—no disassembling



Double Safety Feature—mechanically held and welded

DIAMOND > PRODUCTS

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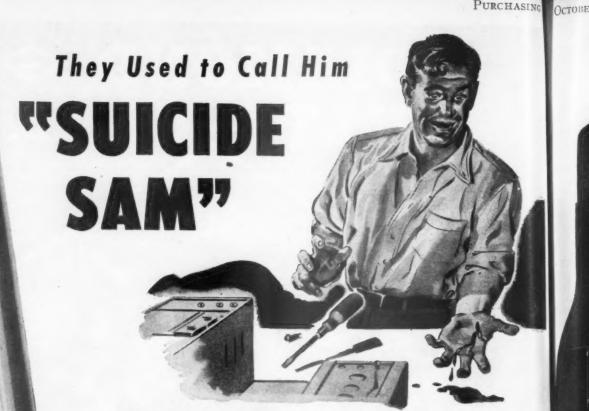
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... because that slotted-screw driver used to slip all the time, and carve him up — ruining his work, and laying him off for a day or so — in spite of the best he could do. And Sam wasn't weak either in body or brain!

### .. but he hasn't stabbed himself once . . . since they gave him AMERICAN PHILLIPS SCREWS

A slotted-screw driver is a dangerous weapon . . . because there's no sure way of keeping it in the slot. There are two open ends of this slot through which the driver can skid out into trouble . . . slashing work-surfaces or human flesh or both.

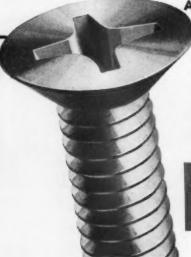
But there are no open roads to trouble in the recessed heads of American Phillips Screws. The 4-winged Phillips Driver can't skid ... out of this tapered recess, no matter what the driving stress. American Phillips Screws and Drivers fit together firm and straight, and stay that way until the screw is turned up tight. This means safe driving, all the time.

This firm fit means easier driving. For all the worker does is put the American Phillips head onto the bit of his power driver, aim it at the work, and pull the trigger. No straining, no wobbling, no driving any way but straight. NET RETURN TO YOU: TOTAL TIME SAVINGS AS HIGH AS 50%.

AMERICAN SCREW COMPANY, PROVIDENCE 1, RHODE ISLAND

Chicago 11: 589 E. Illinois Street

Detroit 2: 502 Stephenson Building



AMERICAN PHILLIPS Screws ey

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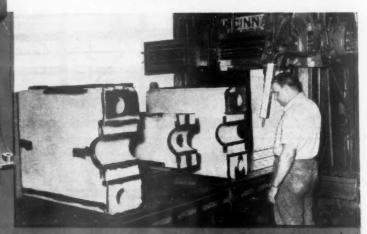
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# MODERN PRECISION WELDMENTS

EAVY STUFF"!

Modern large-scale precision weldments, made possible by advanced techniques developed during the war, are already proving highly advantageous in the heavy machinery industries. Special weldments, designed, fabricated and finished at Warren City, are replacing steel castings in many important applications. In the Bliss Enclosed Press shown here, the crowns, beds and slides are now Warren City weldments, saving weight and increasing strength. High precision is assured by accurate normalizing, stress relieving, machining and testing, with the finest and most modern scientific methods and equipment.

Finishing a precision-tested Bliss press crown, fabricated from welded steel plates at Warren City



# WELDMENTS SAVE WEIGHT, ADD STRENGTH, IN FAMOUS BLISS INDUSTRIAL PRESSES

## Eliminate Pattern Costs and Casting Defects!

2EG-380-102

IF YOUR PROBLEM involves the use of heavy steel castings or weldments, be sure you don't overlook the unusual production facilities and know-how

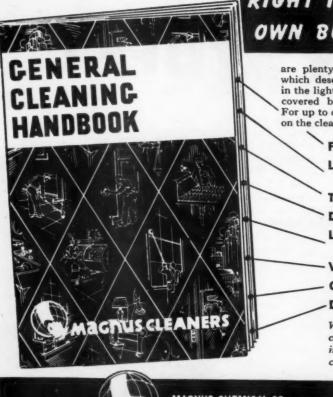
available to you at Warren City Manufacturing Company. Located in the heart of the Cleveland-Pittsburgh industrial area, our huge seven-million-dollar plant contains every modern device for handling, cutting, fabricating, welding, normalizing, machining, assembling and testing heavy steel machinery, parts and equipment. Whether, as in the case of the E. W. Bliss Company, your situation may call for redesigning your present steel castings to enjoy the many advantages of modern precision weldments, or whether your need is simply for extra production capacity without increasing the size of your plant, our engineering staff will be glad to offer you their recommendations without obligation. Write today for our illustrated brochure, including a complete listing of our modern and extensive facilities.



### WARREN CITY MANUFACTURING COMPANY \*\*\*

WARREN, OHIO

Wholly Owned Subsidiary of GRAHAM-PAIGE MOTORS CORPORATION



RIGHT IN YOUR

are plenty of cleaning jobs which deserve careful study in the light of the basic facts covered by this handbook. For up to date technical data on the cleaning of:

Floors
Lighting
Equipment

Toilets Dishes

Locker Rooms

Woodwork

Cement

**Drains** 

Write for as many copies of this cleaning manual as you can use!

MAGNUS CHEMICAL CO. 93 SOUTH AVE., GARWOOD, N. J.

Cleaners • Methods • Machines

# LEHTROMESH

# AMAZINGLY VERSATILE PRODUCT FOR USE IN EVERY TYPE OF INDUSTRY

**LEKTROMESH** is wire mesh without weaving and without punching; it is made by depositing electrolytically any virgin metal to form a design which can be manufactured in continuous sheets, in standard widths and in varying thickness. Circular shapes, patterns, stencils can be furnished with a solid selvage, openings and an inside binder, all in one piece having an unbroken, glass-smooth surface.

The greater rigidity and versatility of fine mesh parts available with LEKTROMESH offers thousands of opportunities for improvement in the design and operation of your products. Write for descriptive literature.

THE
C. O. JELLIFF
MANUFACTURING
CORP.

Manufacturers of

Fabricated Parts, Filters, Strainers DRODIJC JO

Pequot Road
Southport,
Conn.

Wire-Mesh Cloth, Fine Resistance Wire, Dipping Baskets, Screen Cloths (Continued from page 312)

against hoarding, buyers' scrambles, and accumulation of excessive inventories of materials and components.

Controls Lifted on Rubber Goods—WPB—To hasten the reconversion of the rubber industry and return to the civilian market a long list of consumers' articles that have been under wartime control, the Rubber Bureau of WPB has lifted all restrictions on products manufactured of reclaimed and scrap rubber and all synthetic rubber except butyl, the special-purpose type used chiefly for tire inner tubes. Natural rubber as well as butyl remains under rigid control.

Work Glove Production Continued—WPB-Continuation until the first of the year of the special program to stimulate production of work gloves was announced by WPB. The announcement means Schedule F to M-328-B will be in effect through the fourth quarter.

More Lumber Available—WPB—As a result of the sharp decline in military requirements for lumber, the over-all lumber control order has been drastically relaxed. Lumber will be immediately available to distribution outlets to meet all kinds of construction requirements.

Sales Surplus Materials — WPB — has removed the restrictions on special sales of most but not all idle, excess and surplus materials.

Revoke Iron and Steel Directions—WPB— The Steel Division of WPB has revoked four directions to Material Order M-21, the order governing iron and steel. The directions revoked are No. 5 covering ferro columbuim; No. 6, tungsten and molybdenum wire; No. 7, chromium and chrome metal, and No. 8, nickel and nickel alloy products. It is stated there will be more than sufficient supply for conversion needs.

Gypsum Loth Increase—OPA—An increase of \$4.25 per 1,000 square feet in mamufacturers' ceiling prices for gypsum lath and gypsum liner board in the Eastem Seaboard marketing area was announced by OPA. (Amendment No. 3 to Order No. 1, Sec. 25, PMR No. 592.)

Special Tools—OWI—SPB—The Surplus Property Board has issued an amendment to its Regulation 6 and an order there under, to permit the rapid sale or least of special tools. It is felt that this should be of special benefit to the aircraft industry.

File Claims Promptly—OWI—The main problem in contract settlement at present is to make sure that contractors with terminations file their claims promptly, according to Robert H. Hinckley, Director of Contract Settlement.

Utilities Construction Orders Expired September 30—WPB—Utilities Orders U-I U-3 and U-4, the basic war regulation covering construction of new facilities

(Continued on page 318)

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War production has been gruelling and as a result many fine machine tools are due to retire, some should be rehabilitated in part, and others should be entirely overhauled. Take time to become acquainted with the machine's application, capacity, age and general condition. Consider the reconversion, replacement and maintenance costs. Then compare the total investment with the cost of a new model designed and tooled to meet your manufacturing requirements.

A plant adequately and properly equipped with efficient production machinery will be in a better position to cope with today's new developments in metallurgy and metalworking techniques. Costs will be lowered, and the product demand will increase which, in turn, will account for greater employment.

The ability of surplus New Britain-Gridley bar and chucking machines to continue to provide fast, accurate and economical peacetime production will be guided largely through intelligent redistribution and conversion. Let us help you. Consult with our nearby Sales-Engineer or, should you prefer, communicate direct.

# BRITAIN AUTOMATICS

THE NEW BRITAIN MACHINE COMPANY NEW BRITAIN, CONNECTICUT NEW BRITAIN-GRIDLEY MACHINE DIVISION

Manufacturers of Multiple Spindle **Automatic Bar and Chucking Machines** Mechanics Hand Tools • Shop Furniture

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## AAA Ratings, MM Ratings and CC Ratings Now In Effect

Wartime priorities control system, including the Controlled Materials Plan, was cancelled as of September 30th. Changes were made through amendments to Priorites Regulations 28 and 29. New Priorities Regulation 29 provides:

Cancellation of all "AA" preference

Cancellation of all "AA" preference ratings, which includes all ratings except the special "top priority" AAA, the new military MM ratings, and new CC rating on purchase orders that call for delivery after September 30.

AA priority system for textiles has been replaced by new CC rating band. Revised ruling provides for the automatic unrating of all AA ratings for textiles and related items unless the orders have been re-rated AAA, MM, or CC by September 30. Application forms now being used under M-317 and M-328 will continue to be used. Applications already filed for the fourth quarter need not be refiled, WPB states, as it will apply CC ratings on those applications in cases where AA ratings formerly should have been given.

New junior, non-extensible civilian "CC" preference rating is to be used in limited cases to break bottlenecks in reconversion and insure, when necessary, continued production and services.

The new Priorities Regulation 28 explains when the new junior non-extensible 'CC" rating will be assigned. WPB cautioned that its general policy is not to assign priorities assistance for non-military needs. The new "CC" rating will be used sparingly. It is expected that almost all materials will either be in surplus or in comfortable supply, and that ratings will therefore generally not be needed. The applicant must show that he has not been able to get delivery without a rating, and that the item to be rated is a "bottleneck" holding up minimum production, or that it is needed for reconversion construction or other essential construction. The "CC" rating may be assigned, where needed, to increase production to eliminate "reconversion bottlenecks", or in other cases to protect public health and welfare or prevent extraordinary hardships. "CC" ratings may also be assigned in limited cases for essential exports.

WPB said it would continue its policy of giving small business opportunity to obtain its fair share of materials. To this end, WPB officials have been instructed, in considering applications for the new "CC" rating, to give special consideration to the needs of small business.

to the needs of small business.

The "CC" rating is non-extensible. It cannot be extended by a supplier to get production materials or components to make the item sold to his customer, or to replace inventory materials used to make the item, or for any other reason.

The MM rating originally introduced under Priorities Regulation 29 for military use will be continued for the time being to support the requirements of the occupation forces and other continuing military needs.

Priorities Regulation 30, which provided for direct assignment of MM "military" ratings by WPB under certain circumstances, has been revoked.

From July 1 through September 30 the MM rating is equivalent to AA-1, and the CC rating is equivalent to AA-2. After September 30 the sequence of ratings will be AAA, MM, CC, in the order named.

All preference ratings in the AA series are canceled on purchase orders calling for delivery after September 30.

Suppliers must disregard any AA ratings on purchase orders for delivery after September 30 that they have, or may receive, and must treat such orders as unrated.

WPB is discontinuing immediately assigning of ratings except under the special conditions described in the new Priorities Regulation 28. Any application already filed under the old priorities system will be returned without action to the applicant, except in emergency cases.

Orders bearing AA ratings identified as military orders may not be automatically re-rated MM. Most of them have already been unrated by Direction 1 to Priorities Regulation 29, which was issued August 18. Other military orders with AA ratings, and which call for delivery after September 30, must be treated as unrated orders in the same way as all other orders bearing AA ratings in the AA series.

On October 1 the Controlled Materials Plan automatically expires. CMP invenventory limitations, however, are being maintained and strengthened wherever necessary to prevent hoarding, buyers' scrambles, or preem tion of scarce materials, WPB said.

Effective immediately, all fourth-quarter and subsequent allotments of controlled materials are canceled, and producers and warehouses must treat every authorized controlled material order for fourth or subsequent quarter delivery as an unrated order, unless it is specifically re-rated AAA, MM, or CC.

### OPA-WPB DIGEST

(Continued from page 316)

by, and providing maintenance, repair and operating supplies priorites for electric, water, gas and wire communications facilities, expired September 30.

Retail Truck Deliveries—ODT—Wartime restrictions on wholesale and retail motor truck deliveries will be lifted throughout the nation on November 1, according to Col. J. Monroe Johnson, ODT director.

Aircraft Material—WPB—As a further step in speeding up the production of new civilian aircraft, WPB issued a new directive exempting surplus aircraft materials, both Government and contractor owned, from inventory restrictions when they are to be used in the manufacture of civilian aircraft.

(Continued on page 320)



# CASTINGS

- \* Gray Iron
- \* Semi-Steel
- ★ High Test Semi-Steel
- \* Any Size up to one ton

Two modern foundries equipped for fast, efficient production can meet your casting requirements.

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# Is your ROPE-RIGGED EQUIPMENT ready... for the big job ahead? No TIME LIKE NOW to check over your equipment's readi-

ness... for the big competitive job ahead. And in checking your wire rope, include these points:

Are sheaves and drums regularly checked for excessive wear that would injure the rope operating over them? Does the rope get proper handling, lubrication, inspection, maintenance? Is it Roebling "Blue Center" Steel Wire Rope?

If the answers are "yes", bank on dependable, long-lasting, economical rope service . . . for today's toughest, tomorrow's biggest jobs. For "Blue Center", preformed or non-preformed, combines smooth-running flexibility with high abrasion-and-fatigue resistance . . . and extra strength for extra duty!

It's the result of fine Roebling steel, exceptional equipment, a century-old tradition of sound workmanship. And whether your rope problem is one of selection, operation or maintenance, Roebling engineering service can help you solve it . . . to your advantage.

When government needs taper off, Roebling wire rope will again be available to non-priority users, in order of request. Why not place your order now?

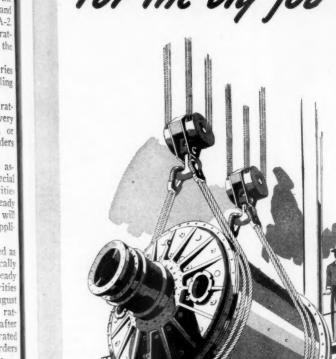
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YOU know it's well drilled-clean, accurate-any drilling operation performed by Celfor Drills, made by Clark. By the famous Celfor Process first used by Clark, all the native strength and toughness of fine tool steel is preserved and utilized. The drills are forged to shape, then twisted hot-producing tools of exceptional cutting quality and long life. On the difficult drilling jobs, where heavy loads and severe strains are the usual thing, Celfor Drills and Reamers are achieving faster drilling, longer tool life, lower cost. ELFOR \_\_the name means "well drilled" CLARK EQUIPMENT COMPANY 308 East 2nd St. Buchanan, Michigan

Products of CLARK . TRANSMISSIONS . ELECTRIC STEEL CASTINGS AXLES FOR TRUCKS AND BUSES . AXLE HOUSINGS . BLIND RIVETS INDUSTRIAL TRUCKS AND TRACTORS . HIGH-SPEED DRILLS AND REAMERS METAL SPOKE WHEELS . GEARS AND FORGINGS . RAILWAY TRUCKS

(Continued from page 318)

Jute Rope Available—WPB—The use of jute rope as a substitute for manila, sisal and henequen rope, the fibers of which remain in short supply, must be continued.

More Paperboard available for Packaging Purposes—WPB—The supply of folding and set-up paperboard boxes used exclusively in packaging foods and other products should be eased considerably now that control orders limiting production for civilian uses have been revoked. Expanding civilian needs will not be handicapped by lack of paperboard containers WPB Paperboard Division Officials said.

Wooden Box Ceilings in East—OPA—Uniform manufacturers' ceiling prices on industrial wooden boxes manufactured in the eastern United States—States east of and including Minnesota, Iowa, Kansas, Oklahoma, Nebraska and Texas, were announced by OPA. Order 11 to RMPR 195.

Price Control On Aluminum, Magnesium Items Suspended—OPA—Suspension of price control on mercury, primary aluminum ingot and pig aluminum, magnesium scrap, primary and secondary magnesium and most aluminum castings, magnesium castings and die castings was announced by OPA. Supplementary Order 129.

Unused Steel Drum Ceilings—OPA—New ceiling price for all sales of unused steel drums, pails and containers, many of which were made for the armed services but have deteriorated or been damaged so as to require reconditioning before they can be used, were announced by OPA. RMPR 43.

Antimonial Lead for Storage Batteries Limited-WPB-Lead is still scarce, WPB cautions, and many pre-war users of this metal will not be able to obtain a sufficient supply in the immediate future, despite the end of the war. Order M-38, which restricts the delivery and controls the use of lead and lead products, has been amended to limit the antimonial lead that may be used for storage batteries to nine percent antimony content, except where specified for contracts for Maritime Commission, or the War Shipthe Army or Navy, the United States Maritime Commission, or the War Shipping Administration in which an alloy with a higher content of antimony is mandatory.

AA-4 Roting Taken From PR 27 Manufacturers—WPB—Small manufacturers, operating under Priorities Regulation No. 27 were notified by WPB that despite the directions of earlier regulations, they would not be permitted to use their AA-4 rating and Z-3 allotment symbol after September 30.

Textile Bogs from Dress Prints — WPB — All restrictions have been removed from the production of textile bags from dress prints, in line with an amendment to Order M-221 governing textile bags. At

(Continued on page 324)

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Transmission Drive Shaft Forging used extensively on Army trucks. Macro-etch through a longitudinal cross-section shows how grain structure and fibre-like flow lines have been directionally worked and controlled by forging in closed impression dies to provide the utmost strength and toughess.

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iress t to to seed impression dies to provide the utmost strength and toughness to meet the unusually severe torsional stress and shock to which this part is subjected. This forging illustrates the high degree of grain refinement and density of structure obtained by forging. Note particularly the distribution of the flow lines throughout the shaft and the head. Forgings are usually free of concealed defects.

### 7 ADVANTAGES Forgings Offer

1. High tensile and impact strength obtained through controlled concentration of grain structure and fibre-like flow lines.
2. A correctly proportioned combination of physical properties, in any specific grade of metal selected, to meet a specific service condition.
3. Reduction of dead weight; maximum strength and toughness in lighter sectional thicknesses.
4. Reductions in certain conditions. and toughness in lighter sectional thicknesses.

4. Reductions in cost at point of assembly due to less time required to machine and finish, and fewer rejects, because forgings are usually free of concealed defects.

5. Rapid assembly of complex parts by welding, because forgings provide welding adaptability of widest range.

6. A reduction of accidents to men and machines, because forgings provide a greater margin of safety due to maximum development of metal quality by the forging process.

7. Maximum strength and toughness, developed through controlled concentration of fibre-like flow line structure of metal at points of greatest shock and stress.

STRENGTH and TOUGHNES

in this Drive Shaft Forging

High tensile and torsional strength, toughness, and high fatigue resistance qualities which are developed to a greater degree by forging metal in clos impression dies. Forging metals in closed impression dies develops maximu metal quality, because the grain structure and fibre-like flow lines inherent wrought metals are controlled, directioned, and concentrated to meet t torsional and impact stresses and shocks which occur under actual servi conditions. Thus, in forgings you get maximum metal quality that under writes dependable performance for your equipment.

Take no chances on a decline in preference for your product. A produ fortified with the metal quality found in forgings outperforms other product A re-check of every stress part, as well as simple handles and levers against the seven advantages that forgings offer, may reveal the possibility of further strengthening a part or a product to give longer service life; to lessen weigh to reduce the cost of machining and finishing; to speed up assembly. Consu a forging engineer connected with your source of supply about the wid range of combinations of quality advantages that are available in forging and how you can obtain metal quality in the exact degree

required for a specific condition. Forging techniques required to forge so-called "impossible-to-forge-designs" are now available for the production of peacetime forgings.

SYMBOLIC EMBLEM OF THE DROP FORGING ASSOCIATION



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# Cut Peacetime Costs Fastening WITH THIS WARTIME



SPEED METHOD!

Holding production costs to a minimum is one of today's major reconversion problems . . . and just as P-K Self-tapping Screws proved the fastest and most economical way to make secure metal or plastic assemblies during wartime, they will help you keep peacetime production costs at a profitable level.

For a large percentage of fastening jobs P-K Selftapping Screws offer a combination of ease, speed and security unmatched by any other fastening device or method. One easy operation makes a strong fastening with Self-tapping Screws . . . merely drive the Screws into plain, untapped holes. They eliminate the need for metal inserts - awkward riveting - and the fumbling that goes with handling bolts, nuts and lock-washers.

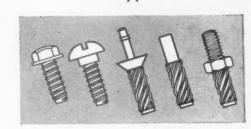


### P-K SCREWS INCREASE EFFICIENCY OF **BURGLAR-PROOF PADLOCK**

This padlock represents some clever design work on the part of the E. T. Fraim Lock Company. The long drive screw on the left side goes into the brass cylinder sleeve, securely attaching it to the casing; the center drive screw goes into the hole in the sleeve for lock assembly purposes only; and the one on the far right side serves as a cover for the shackle stop pin. Nearly 3,000,000 specially designed P-K Screws have been used in the production of this padlock to date.

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FUNCTIONAL, TOO! Parker-Kalon is equipped to produce P-K Self-tapping Screws in special forms so they may also be used functionally . . . as feet - as locking devices - as stops for springs - as retainers for bearings - as pivot pins - as shafts - as plugs for holes - and for scores of other special purposes.

A P-K ASSEMBLY ENGINEER WILL HELP YOU improve product quality, speed work and save money. He is a specialist in all types of plastic and metal fastenings and will be glad to visit your plant and work with you in searching out ALL opportunities for utilizing Self-tapping Screws. Or, you can mail assembly details direct to us for recommendations.



WRITE for P-K's free "Users' Guide". It is crammed with helpful information regarding where and how you can use P-K Self-tapping Screws most effectively. Address: Parker-Kalon Corporation, 208 Varick St., New York 14, New York.

PARKER-KALON Quality-Controlled SELF-TAPPING SCREWS

Metal and Plastic Assembly



To the safety, flexibility and operating economy of modern electric trucks—now add the 30% longer life of Philco "Thirty" storage Batteries. Here's the combination that keeps materials moving—and keeps costs down. As proved by years of service on the toughest jobs, Philco "Thirty" lowers handling costs. Write for new catalog of specifications and engineering data.

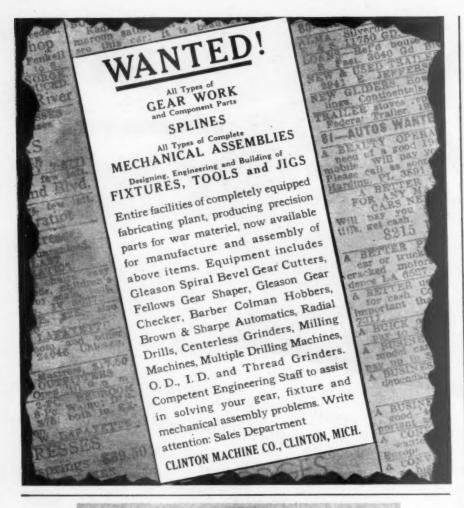
The new Philco "Thirty" for electric industrial trucks is identified by its distinctive red connectors.

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SWAN ENGINEERING COMPANY, INC

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(Continued from page 320)

the same time restrictions on false seams. overstitching, the methods of packing and emptying of bags and the use of wool bags were eliminated.

Surplus Machine Tools for Small Manufacturers-OWI-SWPC-With reconversion the order of the day, small manufacturers and shop operators will be given an opportunity to modernize their equipment with surplus war property, according to Maury SWPC. Maverick, chairman of

Remove Paper Work from CMP Procedure-WPB-A burden of "paper work" for industry and WPB has been eliminated by providing that manufacturers do not have to return allotments "tickets" for controlled materials when they are no longer needed.

Rationed Foods for Institutions-OPA-District offices of OPA will take over rationing of food to institutional users such as hotels, restaurants and hospitals, after local War Price and Rationing Boards complete issuance of allotments for the September-October period. Amendment No. 118 to Gen. Ration Order 5.

Life Rofts-OPA-All sales of life rate and life floats bought from the Federa Government, except pneumatic rafts and floats, will be exempt from price control. Revised Order 38 to SupL. order 94.

Oppose Paper Priorities-WPB-Members of the Overall Paper Industry Advisory Committee he gone on record as being opposed to the use of priorities on paper, paperboard and paper products in the belief that the WPB Paper Division can continue handling the situation satisfactorily under the controls of the Paper and Paperboard C. O. 241.

Priorities on 15 Cotton Fabrics-WPB-Because manufacturers of products requiring cotton textiles were having difficulty obtaining fabric on the free market, WPB added 15 fabrics to the list of those for which priority assistance is avalable (WPB News Release 8997.)

Increase Producers' Ceilings on Cement-OPA-An increase of 10¢ per barrel in manufacturers' ceiling prices for ceme produced in Ohio, West Virginia, Mich gan and some parts of Pennsylvana, Vi ginia and Kentucky, was announced b OPA. Amendment No. 11 to MPR 224

Pricing Procedure Inventory Sales Term nated Contracts-OPA-Suppliers of wa goods to the Government whose contract have been terminated, and who elect retain the contractor inventory, will be able to determine quickly their prior ceilings for sales of these inventories Supplementary Order 130.

Private Home Construction Increasing-OW -NHA-Private Home construction spite of wartime restrictions still in effect is beginning to show an increase, accord ing to Raymond M. Foley, Commissione of the FHA of the NHA.

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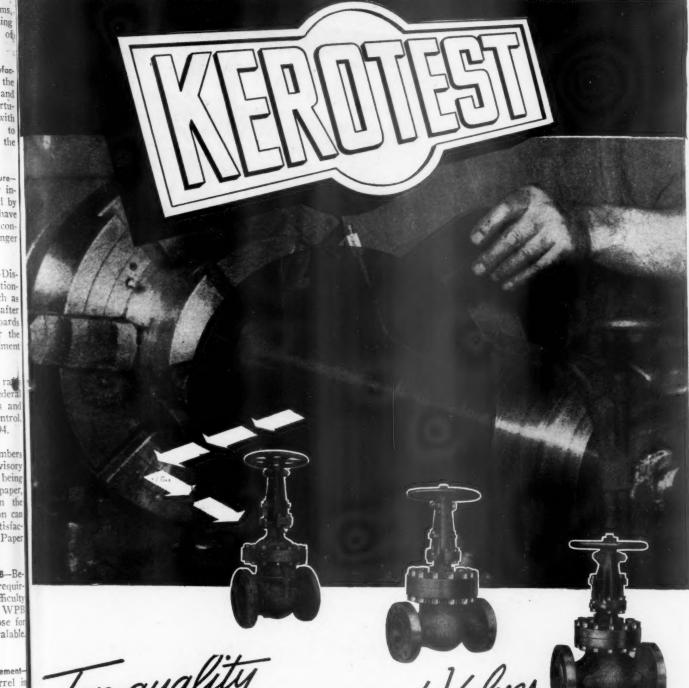
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#### USE OF JUTE ROPE MUST BE CONTINUED

The use of jute rope as a substitute for manila, sisal and henequen rope, the fibers of which remain in short supply, must be continued, the War Production Board reports.

WPB said that Navy and War Ship-Administration requirements for rope for the fourth quarter of 1945 exceeds the anticipated rope production

from domestic mills.

While Army requirements since the victory over Japan have been substantially reduced, the requirements for manila and sisal rope by the claimant agencies still remains extremely high, the board said.

Pointing to a continuing world shortage of manila, sisal and henequin fiber because of the heavy rope demands for United States consumption and for cordage required in the liberated countries, WPB said that small shipments of Philippine abaca might ease the situation in this country.

Sisal production in the Dutch East Indies is still uncertain, WPB said and no information is available as to when supplies from this source can be made available for United States mills.

#### CONTROLLED NATIONAL ALLOTMENT TICKETS NEED NOT BE RETURNED

A burden of "paper work" for industry and the War Production Board has been eliminated by providing that manufacturers do not have to return allotments ("tickets") for controlled materials when they are no longer needed,

WPB announced recently.

As the result of freeing of steel, copper and aluminum through cancellations and the imminent expiration of the Controlled Materials Plan on September 30, the allotment routine was no longer necessary and WPB effected the action by issuing Direction 77 to CMP Regulation 1. The provisions of the direction supersede contrary provisions of CMP Regulation 1, concerning the return of unneeded allotments, outlined in paragraphs (e), (u), (w) and Interpretation 31 of the regulation, WPB said.

#### 1 1 AIM TO EXPEDITE SALE OF SPECIAL TOOLS

To minimize unemployment caused by the temporary closing of war plants for reconversion, The Surplus Property Board has issued an amendment to its Regulation 6 and an order thereunder to permit the rapid sale or lease of special tools, the board announced recently. This should be of special benefit to the aircraft industry SPB said.

Special tools are those of such design as to have apparent value only as scrap, except in the manufacture of the particular product for which they were originally designed. Classified as special tools are

(Continued on page 330)



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DILECTO parts, like those illustrated, are used throughout communications systems, detecting devices and controls wherever electrical currents must be insulated. DILECTO electrical insulating parts must function satisfactorily regardless of humidity, dryness, vibration, concussion. They must be mechanically strong ... resistant to moisture and temperature...and dielectrically effective. In all these requirements DILECTO excels.

DILECTO is also readily fabricated. It may be machined, punched, drilled, tapped, and even formed. It is made in many grades . . . each engineered to meet specific electrical or mechanical problems. DILECTO may be the answer to your "WHAT MATERIAL?" problem. Send for catalog "DO" which gives complete technical and physical data.

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KB-44

HAVEG-Plastic Chemical Equipment, Pipe, Valves and Fittings.

The NON-Metallics DIAMOND Vulcanized FIBRE VULCOID-Resin Impregnated Vulcanized Fibre.

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Available in Standard Sheets, Rods and Tubes; and Parts Fabricated, Formed or Molded to Specifications.

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Bulletin GF gives Comprehensive Data on all C-D Products. Individual Catalogs are also Available.

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small degree, the ability of ships, planes, trucks and trains to keep moving.

The unfailing performance of these springs is no accident. Into their design goes a lot of engineering. Look at the valve springs shown above. Their design seems simple enough, but notice the variations in coil pitch and diameter. These are to foil that arch foe of high-speed mechanisms-vibration.

By adding a coil here, varying pitch there, or changing the spring diameter, Muehlhausen engineers raise the spring's natural vibrating frequency high enough that it will not be excited at normal engine speeds. Of course, the job isn't as simple as that-not mentioned are the hours of study and the precision testing, from the selection of raw stocks to the inspection of the finished product.

### MUEHLHAUSEN SPRING CORPORATION

Division of Standard Steel Spring Company

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● You'll find this book a convenient source to look up tables, and pertinent data in connection with sand castings, permanent-mold and semi-permanent mold castings... to check mechanical properties and compositions of alloys, various Government specifications of alloys, physical constants of metals, and other frequently needed information. This book is yours for the asking ... write today.

Central is a veteran organization of engineers, metallurgists, and foundry specialists, utilizing the most modern facilities for volume production.

Pyrometer controlled furnaces, air-operated molding machines, x-ray inspection of castings, complete laboratory of molding sand and metals, plus heat treating and other far-advanced foundry methods assure to industry a dependable source for quality aluminum alloy castings.

CENTRAL PATTERN AND FOUNDRY COMPANY

Chkage 32, Illinois

RUN ALUMINUM CASTINGS

(Continued from page 327)

jigs, dies, fixtures, gauges, moulds and similar equipment.

The amendment pertains to such tools located in contractors' plants. The order extends this to Government-owned plants in the aircraft industry.

The sale will be by the owning agencies rather than by the disposal agencies and will be by public auction with previously announced upset prices. Whenever no acceptable bid is received, the sale will be by negotiation,

1 1 1
WESTERN PINE CEILINGS ADJUSTED

Adjustments in manufacturers' ceiling prices of western pine and associated species of lumber to permit greater production of one-inch boards and of dry dressed common boards were announced by the Office of Price Administration.

The adjustments became effective September 11, 1945.

An alarming scarcity of one-inch boards caused by a reluctance on the part of manufacturers to dry and remanufacture the more plentiful thicker stock brought about the action, OPA explained. The over-all realization of mills producing western pine and associated species of lumber will not be affected, as the price increases will be balanced by the decreases, the agency added.

Lower prices for consumers will result from the action, OPA also said, because the increase permitted the manufacturers will encourage them to dry and remanufacture the lumber, thus keeping it out of the hands of those not equipped to do the work as cheaply as it can be done by manufacturers.

Major changes made are:

1. Manufacture of western pine and associated species are authorized to add \$1 per 1,000 feet board measure to established f.o.b. mill prices for all 4/4 (one inch) dry pressed common boards.

2. Deductions on dry rough, surfaced green, and rough green graded common lumber are increased \$1, \$2.50 and \$3.50, respectively, per 1,000 feet board measure for most species. These are deductions from the ceiling prices for dry dressed common boards.

3. Dollar-and-cent ceiling prices are provided for 3/4 and 11/16 inch boards. Previously, 3/4 inch boards were priced by special application and 11/16 inch boards were priced by formula.

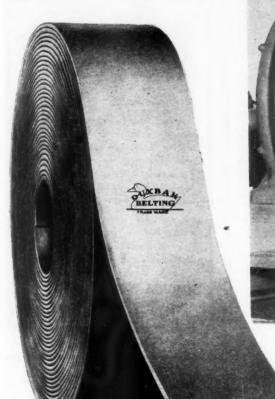
4. The ceiling prices of 7/4 common boards are lowered so that 7/4 resawn boards will net less than the table prices for 3/4 inch boards on grade.

5. The ceilings of 8/4 Ponderosa pine boards and of 5/4, 6/4, and 8/4 Idaho white pine, No. 1 common, are reduced by varying amounts.

6. All common grades 10/4 and thicker except No. 1, 2 and 3 Idaho white and sugar pine, as well as 8/4 larch and fir, are now priced by special application.

The ceilings per 1,000 feet board measure on the remaining dry dressed boards 5/4, 6/4 and 8/4 inch and thicker, remain, in general, the same,

(Continued on page 332)



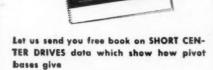


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SCHIEREN BELTS are your assurance of infrequency of shutdowns — with a consequent lowering of your production, assembly and labor costs. It's easy to see these sizable savings repay you many times over for the pennies more per foot you pay for SCHIEREN quality.

The solid dependability of a SCHIEREN LEATHER BELT starts with specially selected raw hides. Every stage of their processing is rigidly supervised by experts — to produce the belt with built-in resistance against exposure to oil, water and other hazards.

Are you up against a belting problem? Let us help you solve it . . . and survey your belting requirements.



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- 2. Boost Overload Capacity of Drives.
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We are national distributors of Rockwood Bases.

CHAS. A. SCHIEREN COMPANY LEATHER BELTING-SPECIALTIES-HYDRAULIC PACKINGS

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ONE OF THE foremost needs confronting business and industry during the period of readjustment is to keep goods and materials of every kind and for every purpose moving expeditiously.

This is an immediate and vital necessity. Railway Express, realizing the importance of supplying ways and means to meet the demand, is devoting its nationwide facilities and experience to the performance of such a service.



(Continued from page 330)

OPA announced, and prices on intermill sales continue at the old levels.

(Amendment No. 2 to Revised Maximum Price Regulation 94—Western Pine and Other Associated Species of Lumber.)

#### GOVERNMENT OWNS 466,000 MACHINE TOOLS

With reconversion the order of the day, small manufacturers and shop operators will be given an opportunity to modernize their equipment with surplus war property, Maury Maverick, Chairman of the Smaller War Plants Corporation, announces.

As a first step, SWPC is mailing inquiries to all small metal-working firms, numbering some 35,000.

Two uses will be made of this survey. First, SWPC will try to find in surplus the particular types of machine tools wanted by each small producer and will then notify him where the tools are located.

Second, the survey will enable SWPC to plan ahead to help small business by showing the over-all demand for the many different types of machine tools.

If the small producer wishes to buy a tool that has been located, SWPC can lend him money for the purchase, or it may exercise its priority as a Government agency to buy this tool for him.

The average machine tool in small manufacturing plants is about 15 years old. Many are more than 30 years old.

"If small independent plants are to survive in the post-war period," Mr. Maverick said, "they must replace this antiquated, inefficient equipment. We want to give them a chance to do it in the most economical way possible—by making surplus machine tools available to them."

The Government owns about 466,000 machine tools. By finding out what small plant operators want, SWPC hopes that it may be able to get a fair share of these tools for them.

## LIFT RESTRICTIONS ON RECLAIMED AND SYNTHETIC RUBBER USES

To hasten the reconversion of the rubber industry and return to the civilian market a long list of consumers' articles that have been under wartime control, the Rubber Bureau of the War Production Board lifted all restrictions on products manufactured of reclaimed and scrap rubber and all synthetic rubber except butyl, the special-purpose type used chiefly for tire inner tubes. Natural rubber as well as butyl remains under rigid control.

Rubber toys for Christmas are in prospect as well as thousands of other familiar objects that disappeared during the war years. Among items freed are combs, beach balls, bathing caps and rubber beach bags; bath mats, bottle stoppers, hair curlers and such household items as rubber gloves, rubber fly

(Continued on page 334)



If you are feeling your way on some surfacing operation . . . seeking a wheel of the grain, grade and structure that will do the job as your "spec" requires—use the 846 K-1-V Dayton as your "yardstick".

You may find, as so many have found, that it's exactly the wheel you are looking for. If not, you will find it at least surprisingly "close" to what you've got to have. So close, in fact, that selection of the correct wheel can then be made without further experimentation.

To save time, money, worry—put this 846 K-1-V Dayton to the test now. Made in a wide range of sizes—with trial wheels shipped from stock.

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Protective Packaging Methods and Materials in universal use today.

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PLANNING new equipment? Consider performance records of **AGALOY** tubing in hundreds of applications.

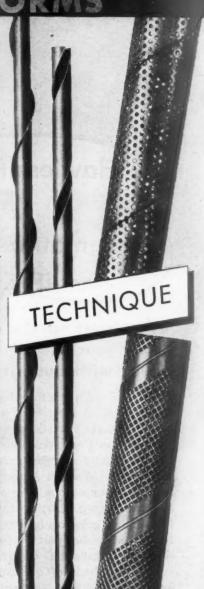
Made in stainless, low carbon, high carbon, alloys and Monel metal. Also bimetal in any combination of metals. In welded, seamless or spiral brazed construction.

Sizes to %-inch outside diameter.

DESIGNING or redesigning parts? New low-cost method originated by **AGALOY** coils a variety of metals into tubular forms.

Outside diameter to four inches; length to 22 feet; thickness to 16 gauge.

Write for detailed information to



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TUBING COMPANY

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## Western has the vast variety of modern screw machine equipment to meet your needs with quantity production economy

Here at Western you find the wide range of equipment needed to turn special parts from as small as .050" o.d. to as large as 45/8" round — precision equipment which, backed by careful planning, long experience and skilled operators, enables us to meet the rigid specifications demanded by new peace-time products . . . Western Automatic produces fast and economically the fussiest jobs, large or small. We have also all facilities for precision secondary operations — tapping, threading, drilling, milling, grinding, heat-treating, pentrating. A single order brings you finished part or assembly in any quantity, promptly, ready for installation — a great saving of bother and scheduling, as hundreds of our customers know. Our engineering department is glad to help you with technical or design problems. Send in your inquiries today.



(Continued from page 332)

swatters, soap dishes, dish drains and squeegee window wipers.

Industrial fields opened up by today's action include the use of sponge rubber in cushions and mattresses, rubber for unrestricted manufacture of weather-stripping, stair treads, rubber flooring, battery cases and such automobile manufacturing uses as pedal pads and floor mats.

Sports shoes and cleats, hockey pucks, boxers' rubber mouthpieces and a number of other athletic goods items will be made available in greater quantities.

Some of the items freed for unrestricted manufacture had already been produced in limited quantities.

Lifting of the restrictions was made possible by increased supplies of synthetic rubbers, WPB said.

The action was effected by two changes in Rubber Order R-1. The first deleted reclaimed rubber, scrap rubber, chlorinated synthetic rubber and all other synthetics except butyl from Table A in Appendix 1, covering permitted uses of materials. The second change was in the wording of the introduction to Table A, removing the necessity for the manufacturer to obtain WPB permission to manufacture listed products.

## RATINGS MUST BE WITHDRAWN ON CUTBACKS AND CANCELLATIONS

Prime contractors and subcontractors receiving cutbacks or cancellations of military orders must promptly withdraw the ratings they have extended to their suppliers, the War Production Board announced.

WPB pointed out that when notice of such a military contract termination is received by a contractor, the contractor must immediately withdraw any extensions of the rating he has made to orders placed by him with his suppliers for more than \$25 worth of material.

If the order is partially canceled, the ratings extended must be reduced accordingly.

This requirement, contained in Section 944.4a of Priorities Regulation 1, does not permit a contractor to allow the extended ratings to remain in effect until his suppliers have delivered the materials for which the rating was extended and which are no longer needed to fill the cutback or terminated contract, WPB said.

This section also states that if a preference rating that has been assigned to a named person is revoked, he must immediately, in the case of each order to which he has applied the rating, either cancel the order or inform his supplier that it is no longer to be treated as rated.

WPB explained that if the contractor has an inventory in excess of the quantities permitted under Priorities Regulation 32 and the directions to that regulation, or would have an excess if he continued to receive deliveries from his suppliers after a contract termination, he must also adjust his outstanding orders

(Continued on page 338)

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but fast!

And it's back to "civies" for all industry, too, as the nation gets ready for the peacetime change.

We at Levinson Steel, proud of our reputation for dependability and service, have already "changed clothes." We've rolled up our sleeves and are ready to go to work. We're prepared now to handle your inquiries for warehouse and fabricated steel. 'Phone, wire, write!

THE LEVINSON STEEL CO.

Warehousers-Fabricators

PITTSBURGH, PA.

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The Okonite Company Passaic, New Jersey

Our urban primary system consists of 3000 volt rubber insulated.

Our urban primary system consists of 3000 volt rubber insulated.

For the past four years we have been using four of the ground.

For the past four years we have been using four of the past four years we have been using the past four years we have been using the past four of the past four of the past four of the past four years without the use of compound filled boxes. Gentlemen:

We had a fair stock on hand when the rubber situation became critical and have been fortunate enough to pick up several lots to remove a fical and have not suffered. Now however, we would like to remove a number of underground junctions, which will involve splicing on risers to go up poles, and we find that we have less than 100 pounds of Okonita to go up poles, and we find that we have less than 100 pounds of okonitations of the poles, and we find that we have less than 100 pounds of okonitations.

If you can still supply the same high quality of Okonite tape as before the war we will go ahead with the work. But if it is less rebefore the war we will either postpone the work for a while longer assistant to moisture we will either postpone the work for a while longer or use compound filled boxes.



Yours very truly. LIGHT AND POWER DEPARTMENT

L. E. Price Superintendent



We at Okonite like to get letters that tell us about good jobs done by our products. Naturally that goes for tapes as well as cables. And also naturally - we like to get orders. Remain assured that in Okonite and Manson tapes we have consistently refused to use substitutes, and any such tapes you obtain are "the same high quality . . . as before the war."

But we haven't been able to fill all our orders for Okonite and Manson tape because of government restrictions on critical rubber. When Okonite and

Manson tapes are again available to all, there will have been no let-down in what they have always offered utilities, railroads, and other industry. Long service life, for example, moisture resistance . . . better splicing . . . toughness and weathering qualities . . . in short, what it takes to give a joint the best insulation and mechanical protection that money can buy.

• When unable to obtain Okonite and Manson tapes, many of our customers are obtaining satisfactory results from our Dundee tapes or our Hazard Division's Panther and Dragon Tapes. The Okonite Company, Passaic, New Jersey.

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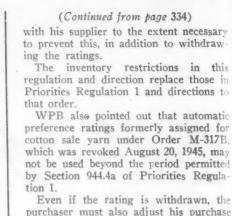
THE advantages of McKay Stainless Welding Electrodes are now made available to AC equipment users by the addition of an AC series to the popular McKay certified and researched line.

These new AC electrodes, conforming to A.I.S.I. specifications and type numbers, have a special titania coating (cream in color) and similar operating characteristics to their corresponding stainless types for DC Reverse or DC-AC operating. Available in 25 or 50 lb. cartons.

Full information is obtainable from your nearest McKay representative or distributor. Your inquiries are invited. When ordering be sure to specify—AC Type.

## AVAILABLE IN THESE GRADES

Type	No.	308
Type	No.	309
Type	No.	309 Cb
Type	No.	310
Type	No.	316
Type	No.	347
Type	No.	410
Type	No.	430
Туре	No.	502
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Even if the rating is withdrawn, the purchaser must also adjust his purchase order to the extent necessary to avoid an excessive inventory.

#### CANCELLED' CONTRACT INVENTORY PRICE CEILINGS

Suppliers of war goods to the Government whose contracts have been terminated, and who elect to retain the contractor inventory, will be able to determine quickly their price ceilings for sales of these inventories, the Office of Price Administration announces.

Where price ceilings already are established for the same materials when sold in regular commercial channels, these ceilings will apply to the retained inventory stocks of war goods.

Where there are no existing ceiling prices for such materials, sellers will follow simple formulas to arrive at their ceiling prices. The formulas differ, depending upon whether the materials are completed, only partially completed, or in raw state.

Provision is made so that OPA may establish special prices or exemptions where these inventory pricing provisions are not sufficiently tailor-made for a particular class of commodities.

Sellers will be required to supply invoices to purchasers on all contractor inventory sales.

(Supplementary Order 130-Maximum Prices for Sales of Contractor Inven-

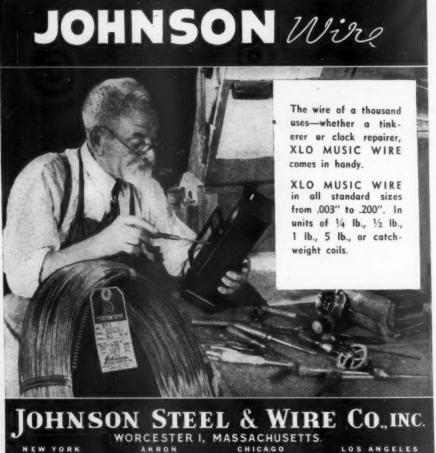
#### AA PRIORITY RATINGS TO CONTINUE ON TEXTILES

The AA system of priority ratings will continue for the present to apply to textiles and related items listed in Schedule A of Order M-328, even though the purchase order calls for delivery after September 30, the War Production Board announces.

WPB pointed out that the statement in Priorities Regulation 29 that all preference ratings in the AA series are canceled on purchase orders calling for delivery after September 30 does not apply to textiles or related items. The rules for these items, WPB said, are stated in Direction 18 to Order M-328. issued June 30, 1945.

This direction states: "Until further notice, the AA rating system will remain in effect for all textile and related items.'

(Continued on page 340)





## ROCHESTER CAN COMPANY

80 Greenleaf Street

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# Tape ... your most versatile worker

FILMONIZE Tapes do so many important things for so many important industries—that we can't begin to tell you about them all.

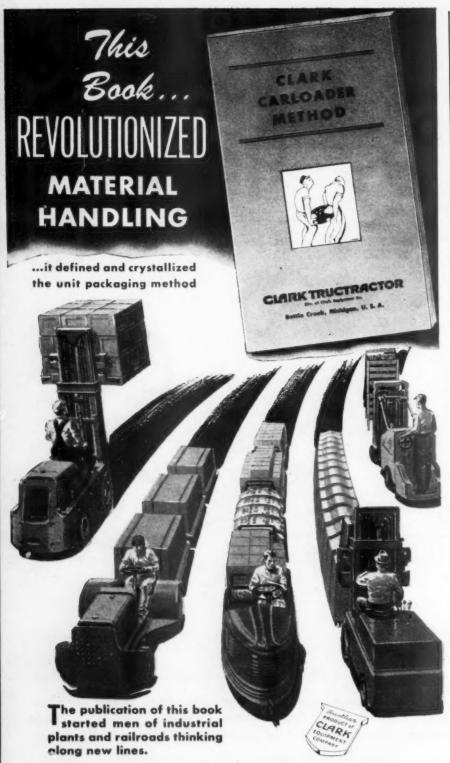
But we can tell you that FILMONIZE saves time and money wherever it's used.

Try FILMONIZE on troublesome, time-consuming operations in your plant. Or, better yet, send for our Tape Engineer—whose business it is to show you how to use tape most efficiently—and to design special tapes for particularly intricate jobs.

Meantime, your local distributor will show you the FILMONIZE line: Transparent Tapes, Colored and Multi-Colored Tapes, Printed Tapes, Riveting Tapes, Identifying Tapes, Splicing Tapes, Acetate Fibre Tapes, Metal Tapes, Specialty Tapes, Packaging Tapes. Widths of  $\frac{1}{2}$ " to 18" throughout.







Out of this book stemmed the material handling principles and methods that have enabled the Army and Navy to successfully handle in this war the burden of supplies, munitions and equipment.

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#### MANPOWER STATEMENT NO LONGER NEEDED ON WPB APPEALS

A statement of manpower requirements is not necessary hereafter in making appeals from War Production Board orders, regulations or administrative actions, WPB announces.

An amendment to Priorities Regulation 16 (Appeals Procedure) eliminates the necessity for filing manpower information on Form WPB-3820. This information formerly had to be filed on appeals where production would take place in Group I or Group II labor areas or where the number of production

workers would be more than 100 if the appeal were granted.

NEW CEILING PRICES FOR USED STEEL DRUMS, PAILS AND CONTAINERS

New ceiling prices for all sales of unused steel drums, pails and containers, many of which were made for the armed seervices but have deteriorated or been damaged so as to require reconditioning before they can be used, have been announced by the Office of Price Administration.

The new ceiling prices, OPA said, are the same as those provided for used drums and other used steel shipping pack-

ages.

As a result of the changing requirements of the war program, surpluses of new steel drums, pails and containers that require reconditioning before they can be used have accumulated in warehouses. These accumulations are now beginning to flow into commercial markets as a result of the Government's surplus property sales. The OPA said that:

1. For new containers that are rusted or damaged and have not been reconditioned, present ceiling prices for unreconditioned used containers may be charged.

2. For reconditioned unused containers, ceiling prices are those provided for re-

conditioned used containers.

OPA also announced establishment of dollar-and-cent ceiling prices for damaged new drums and used drums from 13 to 65 gallons in size and for pails in sizes from one to 12 gallons.

Previously, dollar-and-cent ceilings were provided only for drums of 14 to 16, 24 to 33, and 50-58 gallons' capacity, and for pails in sizes of 2, 3, 5 and 5½ gallons.

Drums and pails of other sizes were priced by special order.

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The following ceiling prices per drum for reconditioned unused drums and reconditioned used drums apply to all sellers:

Calif. Ore.,

					W	ash., and	
					7	Cerr. of	States
G	allo	n	Car	acity	Puer	rto Rico	Other
Over	12	to	19,	inclus	sive	\$1.60	\$1.45
Over	19	to	33,	inclus	sive	2.10	1.85
Over	33	to	58,	inclus	sive	2.75	2.25
Over	58	to	65,	inclu	sive	3.45	2.90
		10				2445	

(Continued on page 344)

## They can't work Half-Starved!



## Send Food to Your European Employees

It will be many years before your associates and employees in Europe will be able to get all the food they need. The proposed food quota of 2,000 calories a day is below the minimum requirement and is not enough to keep a man in good health and working efficiently.

Fraser, Morris & Co., America's largest shippers of overseas food parcels, has planned special food packages to serve as direct and effective means of alleviating the hunger of your overseas employees. These "planned" food parcels contain the basic necessities — tins of meat, fish, oil, sugar, butter, cheese, etc. — each parcel designed to satisfy the needs of your employees in the particular locality in which they work.

Every parcel you send will reap a double reward. You will be performing a humanitarian service. You will build never-to-be-forgotten loyalty and good will. Fraser, Morris & Co. is at your service, fully prepared to send food parcels to your employees in England, France, Belgium, Italy — and all other countries as soon as conditions permit.

Write for Full Information and Catalogue "PR"

## FRASER, MORRIS & CO.

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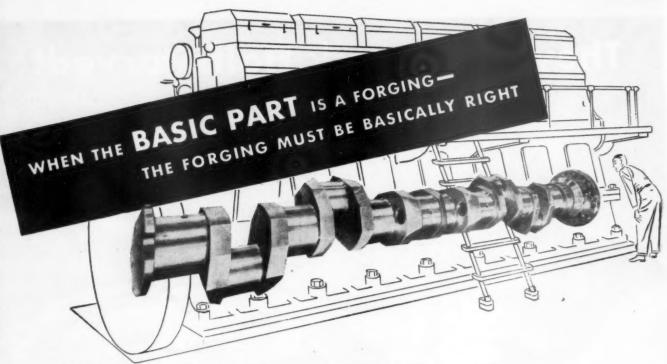
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We also ship food parcels to your employees in service and to your relatives and friends in England, France, Belgium and Italy.

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American Safety Razor Co. American Viscose Corp. Chase National Bank Coca-Cola Bottling Co. Thomas A. Edison, Inc. Elgin National Watch Co. Ford Motors Corp. General Electric Co. General Motors Corp. Goodyear Tire & Rubber Co. Gruen Watch Co. International Tel. & Tel. Co. J. P. Morgan & Co. McGraw Hill Publishing Co. National City Bank of N. Y. N.Y., N. H., & Hartford Railroad Norfolk & Western Railroad Pennsylvania Railroad Park & Tilford Importing Co. R.K.O. Pictures, Inc. Schenley Distillers Corp. Seagram Distillers Corp. Socony Vacuum Oil Co. Standard Oil of New Jersey Westinghouse Electric Mfg. Co. Worthington Pump & Machinery Co.



The crankshaft of a Diesel engine—the rotor shaft of a steam turbine—the spindle of a machine tool are typical of the "basic" functions forgings must perform in making engines, power plants and machinery live up to "their good name" in actual service.

When you buy such a forging, you want faithful adherence to specifications but you also want something more. You want an inherent quality that spells longevity and freedom from trouble. To possess these qualities a forging must be born of clean steel and handled with constant skill through all the critical stages of forging, heat treating and precision machining.

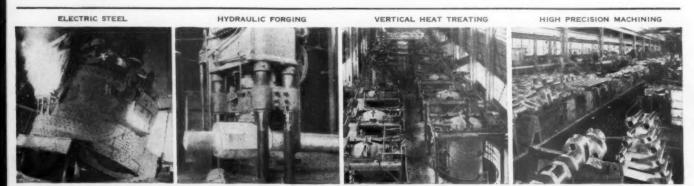
It takes equipment, experience and men who really have the "know how" to produce that kind of forging—and that is the only kind of forging worth while buying, if your reputation hinges on how that forging performs. Let National Forge tell you about it now, for National Forge can serve you now.



Have you read this book? If not, write for it now.

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IRVINE, WARREN COUNTY, PENNSYLVANIA
"WE MAKE OUR OWN STEEL"



## erformance recision...



DRILLING and rough reaming Army Tank track end connectors with CLEVELAND High Speed Twist Drills. Average production . . . 200 per hour, 16 hours a day. Total drill replacement . . . less than 12

Another outstanding example of the dependable pre-cision that has made the \$\phi\$ trade mark the symbol of quality for nearly 70 years.

Specify CLEVELAND Twist Drills, Reamers, Screw Extractors, Arbors, Mandrels, Sockets, Mills, Counterbores and Carbide Tipped Tools for high production and economy.





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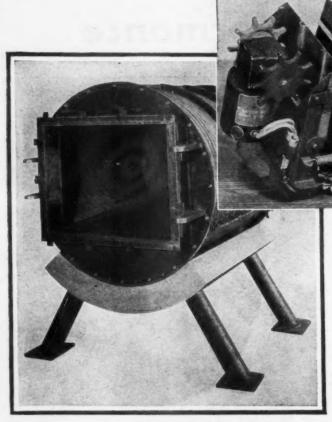
The Cleveland Twist Drill Co., (Dept. U) 1242 East 49th St., Cleveland 14, Ohio Please send a copy of "Handbook for Drillers" without cost or obligation.

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Ammunition Booster to feed belted ammunition to machine guns on Martin air-planes. Built of stains steel by Brandt of Baltimore.

3,800 lb. Electro-Procated by Brandt for a cork board plant.

## **These Fabrication Facilities May Fit Your Postwar Plans**

If your postwar production will include some fabrication to be done by a reliable, experienced, metal-working organization . . . Brandt of Baltimore can fill a definite need for you.

For over 50 years Brandt has fabricated metal for scores of industrial uses. Present products range from small, formed units of a few ounces to huge fabricated assemblies weighing 30 tons. The Brandt 81/2 acre plant has complete, modern equipment for shearing, rolling, forming, welding. Machine capacities range from the lightest gauge up to and including 11/4" mild steel or 3/4" armor plate. All metals, ferrous, non-ferrous and alloy, can be completely fabricated to your specifications.

And if you've hit a snag on your postwar product, our designers and engineers will welcome the opportunity to assist in planning the details and specifications. Naturally, all plans will be held in strict confidence. So if there are fabrication or design problems in your postwar plans, we invite you to discuss them with-

# VDI of Baltimore

Charles T. Brandt, Inc., 1708 Ridgely Street Baltimore 30, Maryland

BRANDT of Baltimore · Craftsmen in Metal Since 1890

(Continued from page 340)

The new dollar-and-cent ceiling prices for reconditioned pails ranges from \$0.31 each for the one gallon sizes to \$1 each for the 12 gallon sizes.

OPA further announced establishment of dollar-and-cent ceiling prices for converting tight head to full open head drums. It also authorized sellers of used steel shipping packages not specifically priced to use the ceiling for the most nearly comparable item in capacity and gauge listed in the regulation without obtaining prior OPA approval.

In addition, OPA announced that sellers in the future need not supply invoices to purchasers where the sale

is for \$10 or less.

(Revised Maximum Price Regulation No. 43—Used Steel Drums, Pails, and Containers, and Reconditioning of Used Steel Drums.)

### PERMITS UNNECESSARY FOR COASTAL AND INLAND VESSELS

Special permits to sell, charter, transfer or operate vessels, other than in specified trades, on the inland and coastal waters of the United States are no longer necessary, the Office of Defense

Transportation announced.

The permit requirement was canceled through the revocation of joint orders of the ODT and the War Shipping Administration (General Order ODT-40 and General Order WSA-27) in effect since July 2, 1942. Under the provisions of these orders, the sale, charter or transfer of vessels was regulated to assure adequate floating equipment for the movement of all war and essential civilian cargoes into vital areas.

#### WPB TO CONTINUE ALLOCATION OF CATTLE HIDE, CALF AND KIPSKINS

Removal of restrictions on the use of leather in various products for which leather has been denied during the war period, was announced by the War Production Board and the Office of Price Administration. These include luggage, waistbelts, handbags, upholstery, slippers, jackets and wallets.

The action was taken today through amendments to Orders M-310 (hides, skins and leather) and M-217 wear). M-310, the basic leather conservation order, was amended because military cutbacks have increased the supply available for civilian markets.

A. Krug, WPB Chairman said: "WPB and OPA have been jointly reviewing the expected rates of shoe production to result from recent substantial military cutbacks. It seems clearly established that there will be sufficient leather available to increase civilian shoe production substantially and rapidly. The removal of restrictions on the use of leather will encourage the rapid reconversion of the leather industries and stimulate employment."

Mr. Krug pointed out that WPB is retaining within M-217 certain provi-

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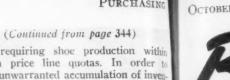
# Referred BY MACHINISTS

## **WILLIAMS MACHINISTS' TOOLS**

Experienced machinists prefer Williams Tools because they help produce better work easier. Management specifies them because they help reduce production costs. Williams guarantee them because they represent the finest in design, workmanship and dropforged dependability. Williams Machinists' Tools are sold by Industrial Distributors everywhere.

J. H. WILLIAMS & CO., BUFFALO 7, N. Y.

DROP FORGED TOOK





From the swift era of war production comes another modern miracle, the cut-off wheel - man power and man hour saver - for the fastest, smoothest method of cutting tubing, wire, steel and brass sheets, glass, porcelain, Stellite, tungsten, plastics, laminates and other hard-to-slice materials.

When RT, the special formula bond was developed, it put the cool-running CHICAGOS 'way out in front in real performance records.

Available in rubber or resinoid - a full range of styles and sizes. 3 bond types — for every operation.

WANT TO TRY ONE? Tell us what you have to cut, grinder you use and size wheel you'd like. We'll send a test wheel promptly. Write for Circular.

### CHICAGO WHEEL & MFG. CO. Originators of the famous Chicago Soft Rubber Polishing Wheels

1101 W. Monroe St.,	Chicago 7, III.
☐ Send Circular ☐ Send Test Wheel	Name
Size	Address

sions requiring shoe production within

certain price line quotas. In order to avoid unwarranted accumulation of inventories and to assure maximum production and to aid in protecting the price stabilization program, WPB will continue the allocation of cattlehide, calf and kipskins in accordance with M-310.

The amendment to order M-310 removed all provisions as to the cutting of sole leather and raised from 100 to 500 the number of hides per month that can be purchased by a tanner without authorization from WPB.

A manufacturer who did not use cattlehides, calf and kipskins in his business in 1942 may apply for WPB authorization to purchase such raw stock, by addressing the Clothing, Textile and Leather Bureau, War Production Board Washington 25, D. C.

## LEAD IS STILL SCARCE

Lead is still scarce, the War Production Board cautions, and many pre-war users of this metal will not be able to obtain a sufficient supply in the immediate future, despite the end of the war.

Inasmuch as WPB Order M-38 controls the use of lead, whether primary, secondary, or scrap, it is evident, WPB said, that this control is necessary and relied upon to provide lead, even scrap. for permitted uses.

Order M-38, which restricts the delivery and controls the use of lead and lead products, has now been amended to limit the antimonial lead that may be used for storage batteries to nine per cent antimony content, except where specified for contracts for the Army or Navy, the United States Maritime Commission, or the War Shipping Administration in which an alloy with a higher content of antimony is mandatory.

#### CEMENT INCREASED 10c PER BARREL

An increase of 10 cents per barrel in manufacturers' ceiling prices for cement produced in Ohio, West Virginia, Michigan and some parts of Pennsylvania. Virginia and Kentucky was announced by the Office of Price Administration

The increase becomes effective September 5, 1945, and may be passed on at all levels of distribution.

Today's increase is the second since ceilings originally were established at the March 1942 level. An earlier increase of 10 cents per barrel became effective August 30, 1944.

Subsequent study by OPA revealed the need for an additional increase to meet steadily mounting costs, the agency announcd.

OPA also announced that resellers of ready-mixed cement will also be permitted to pass on to customers today's increase.

Today's action, OPA said, applies to all types of Portland cement, except white cement, and includes masonry and other special kinds of cement.

(Amendment No. 11 to Maximum Price Regulation 224—Cement.)

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# Brawn.. where brawn is needed



OCTOBER

MAKERS OF EVERY TYPE OF GEAR AND GEAR SPEED REDUCER

Established 1888

900

POWER SAVING PRODUCTS





Planetary Gear Speed Reducers

We have been making various types of cut gears and gear speed reducers for many years . . . Our extensive present day facilities for their manufacture are the outcome of developing an organization that would capably handle our resultant expansion . . . These facilities give us a capacity that readily handles industry's power-saving requirements.

Our experience of over 58 years of manufacturing various types of gears and gear reducers is invaluable in the selection of the proper type of gear speed reducer for your power-saving transmission problems.

D.O. James Gear Sales-Engineers are located in key industrial centers.

D.O.JAMES MANUFACTURING CO.
1140 West Monroe Street Chicago, III.



Spiral Bevel Gear Speed Reducers



Type "H" Worm Gear Speed Reducers



Helical Worm Gear Speed Reducers



Double Worm Gear Speed Reducers



Spiral Bevel Herringbone Speed Reducers



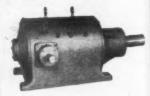
Motorized Worm Gear Speed Reducers



Motorized Helical Gear Speed Reducers



Motorized Planetary Gear Speed Reducers



Spiral Bevel Planetary Gear Speed Reducers

# f you make it of

# make it of the best!

PIPE cleaner wire is only one of several hundred special and disciplinate dred special and distinct types of steel wire we produce for manufacturing purposes.

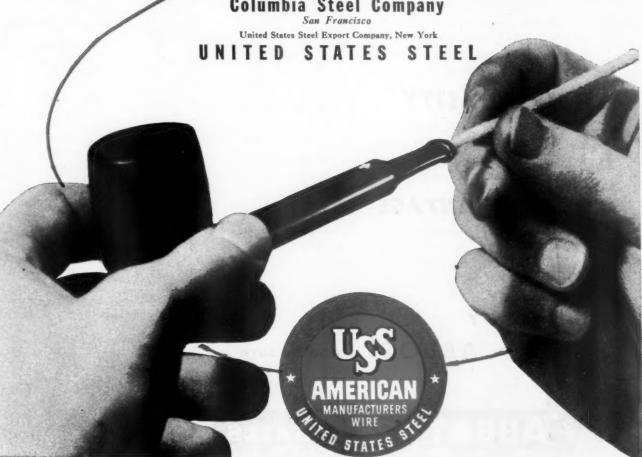
From these many different wires, more than 160,000 different products are being produced. Some are simple, others highly complicated, but all are essential to modern living.

We manufacture wire into most an shape, round — flat — square — oval — bexagon, with quality to meet the most exacting specifications. Regardless of the need or the problem, the experience and facilities of this organization are ready to assist you in your future WIRE requirements.

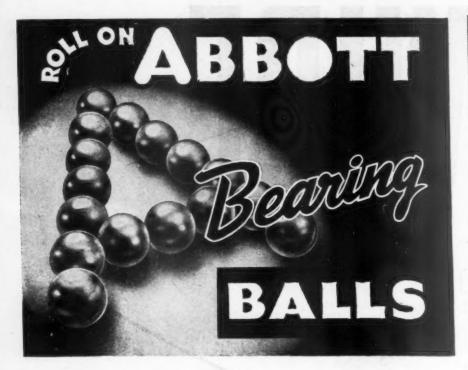
## American Steel & Wire Company

Cleveland, Chicago and New York

Columbia Steel Company



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# · PERFORMANCE · IT'S THEIR STAMINA . . . . . .

War production records place Abbott Bearing Balls in the top spot for rugged, "built-in" stamina. The extremely heavy duty assemblies or the lighter, intricate mechanisms are outstanding in their respective load carrying jobs. It's their "built-in" Stamina!

## THEIR QUALITY

From the steel, held to Abbott specifications, thru each step in the production of Abbott Bearing Balls to the final individual ball inspection — Abbott men and methods rigidly maintain the Abbott standards of quality.

## YOUR ADVANTAGE . . .

Fulfilling every demand of your load carrying job, Abbott Bearing Balls assure that extra "uninterrupted" performance so vital in current assemblies and in the new things to come.

Also Balls of Bronze, Stainless Steel and other metals...

SPECIFY

"ABBOTT" and be sure



## STAMPINGS AND FERROUS FORGINGS ON ADJUSTABLE PRICING BASIS

Producers of stampings, screw machines and ferrous forgings were authorized by the Office of Price Administration to bill their customers on an adjustable pricing basis, pending a revision of maximum prices to meet reconversion needs.

Increases over present ceilings that may be quoted, however, are limited to eight per cent.

In addition, all sales made on an adjustable pricing basis must be adjusted later to reflect actual new ceiling prices when the current review of ceilings is completed and the amount of price increases to be authorized is determined.

An upward adjustment in ceiling prices for stampings, screw machine products and ferrous forgings appears necessary, OPA said, because of increases in labor and material costs which cannot be absorbed in the narrow margin of profit, which these industries had in effect on their civilian production.

(Order No. 4 under Maximum Price Regulation 351 — Adjustable Pricing for Ferrous Forgings and Order No. 497 under Revised Maximum Price Regulation 136 — Adjustable Pricings for Stampings and Screw Machine Products — both effective September 5, 1945.)

#### RUBBER PROGRAM—FEDERAL FACILI-TIES TO BE KEPT IN PRODUCTION

Rationing of tires should remain only so long as the difference between supply and demand makes orderly distribution without rationing impossible, the Rubber Industry Advisory Committee was told by War Production Board officials and an Office of Price Administration spokesman at a recent meeting Truck tires probably will be removed from rationing before passenger car tires and new cars will be supplied with only four tires so long as tires still are needed for rolling wheels now on the road, the discussion indicated.

Rumors that have been sweeping the country that rationing of certain categories of tires will be lifted immediately are unfounded, WPB said. Tires designated as "factory seconds," military surplus tires, and all other passenger and truck tires now being rationed will continue to be rationed. Quotas for September have already been sent out to OPA district offices.

The Rubber Bureau of WPB has recommended that all federally-owned manufacturing facilities be kept in production as long as tire rationing remains and perhaps for some time thereafter, the committee was told.

Consideration of the post-war supply of natural rubber was shelved until definite information is received from the liberated areas of the Far East. Until this information is available and until some knowledge is gained of what the additional supplies of natural rubber will cost, it is impossible to determine the

(Continued on page 352)

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## to Cut Costs and to meet the most Exacting Specifications

We picked GRM 246 to illustrate the TWO BIG ADVANTAGES you get when you make Fel-Pro your source of supply! The development and utilization of specially treated materials for the solution of thorny gasket problems is one of Fel-Pro's important "stocks-in-trade"! This material, for example, meets, better than anything yet discovered, certain gasket problems of, among others, a leading tractor manufacturer, a large maker of oil filters and a maker of air temperature controls.

Advantage One is Fel-Pro's Know-How, resulting from

years of experience in providing the answers to difficult gasket problems. Advantage Two is Fel-Pro's production facilities, the specially developed equipment that makes possible ECONOMICAL PRODUCTION to HIGH-EST QUALITY STANDARDS.

Write Today for FREE PORTFOLIO CONTAINING ACTUAL SAMPLES OF OVER FIFTY OF THE LATEST DEVELOPMENTS IN SEALING MATERIALS, sent to you without cost or obligation. Write also for details of our NO CHARGE CONSULTATION SERVICE.



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NAME

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H ERE'S another factory where LEA Finishing Specialists helped to work out proper finishing methods . . .

. . . and where LEA is supplying the proper grades of LEA COMPOUND, industry's greaseless composition for burring, polishing and other finishing operations.

Yes, the proper finishing of metals and non-metals calls for a thorough knowledge of the behavior of materials during the various finishing operations. It calls for the broadest experience in finishing . . . in burring, in polishing, in buffing.

There's where LEA fits into the picture. We're glad to have your orders for LEA COMPOUND and LEAROK, the "no-free-grease" composition for buffing. But why not suggest to your production department that they have a LEA Specialist check over their present finishing methods?

## THE LEA MANUFACTURING CO.

WATERBURY 86, CONN.

Burring, Buffing and Polishing . . . Manufacturers and Specialists in the Development of Production Methods and Compositions (Continued from page 346)

amount of synthetic rubber that will be required by industry, the committee members agreed.

However, a program was outlined for improving the quality of certain products when increased supplies of natural rubber become available. One of the first major items in which more natural rubber will be used is truck tires, it was said.

The committee was given tentative tire and tube production schedules through 1946. They call for 66,000,000 passenger automobile and motorcycle tires in 1946, an all-time high. The previous peak output was 53,000,000 in 1941. In the last three months of this year 11,774,000 are scheduled. Of next year's total 44,000,000 will be available for civilian replacement and export.

### ADEQUATE WOOD PULP FOR FOURTH QUARTER

Revocation of wood pulp controls and allocations under the pulp order (M-93) on October 1 was recommended by members of the Wood Pulp Allocation Industry Advisory Committee WPB announces. The committee said present indications are that there will be adequate supplies of wood pulp available in the fourth quarter, which will make the revocation of this order possible,

## TO ALLEVIATE DEMAND FOR TEXTILES FOR MRO USES

In view of the extensive cancellations of military contracts in textiles, the War Production Board has made amendments in the low-price cotton garment program to allow mills to sell certain of their unfinished cloth on the free market after rated orders have been filled.

The change was effected by revocation of Paragraph F of Order M-388A, which controlled the distribution of virtually all unrated cotton fabrics contained in the fabric schedules of M-388A.

M-388A, which insures production of low-price cotton apparel, is replaced October 1 by a new low-price program under Schedule C to Order M-328B.

Heretofore, under Paragraph F, the mills could dispose of their production of gray goods only to converters who held serial numbers given out by WPB, and, with certain other minor exceptions, on rated orders.

The revocation of the paragraph, WPB said, will alleviate the present demand for ratings for textiles for maintenance, repair and operating supplies and other uses.

It is further expected that, with the increased supplies available because of military cutbacks, converters will be receiving substantial quantities of gray goods and that the revocation of the paragraph will result in freeing the market without reducing the quantity of gray goods available to converters for the production of low-cost apparel.

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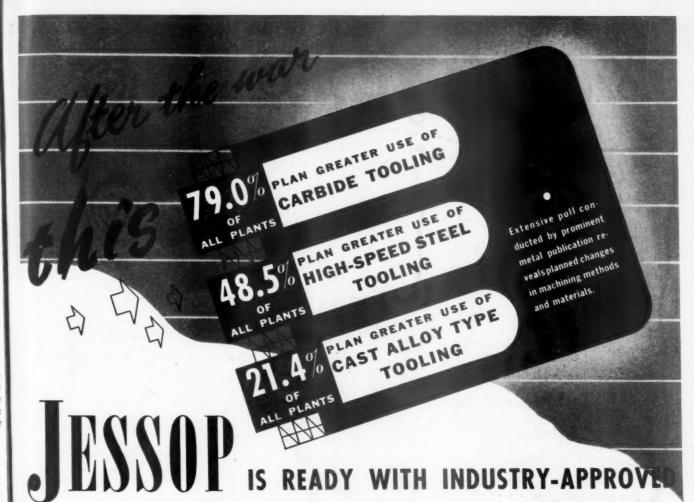
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CUTTING TOOLS TO MEET EVERY REQUIREMEN

A recently completed survey covering more than 20% of all plants in the United States in which machining is done on a production basis, including plants of all sizes and in all fields of operation, discloses the present intentions of Industry as set forth in the graph.

To meet this indicated increase Jessop is ready with Carbide Tipped Tools, High Speed Tool Steels and Cast Alloy Cutting Tools widely recognized as front-rank, top quality.

#### . MALTA CARBIDE CUTTING TOOLS

A complete line of Malta cutting tools and tips is available for immediate shipment in standard sizes and grades. Special tools and dies are made to specification.

#### . HIGH SPEED STEELS

KING COBALT, Type 18-4-2 +12% Co.
PURPLE LABEL EXTRA, Type 18-4-2 +8% Co.
PURPLE LABEL, Type 18-4-1 —5% Co.
SUPREMUS EXTRA, Type 18-4-2.
SUPREMUS, Type 18-4-1.
MUSTANG SPECIAL, Type 6-6-2 +5% Co.
MUSTANG, Type 6-6-2.
MOGUL, Moly Type.

#### **CAST ALLOY CUTTING TOOLS**

JESSOP T AND V, cast Non-Ferrous Cutting Tool.

In the same excellent Jessop Quality are complete lines of Specialty Tool and Die Steels for special purposes, as well as Stainless and Stainless Clad Steels in many analyses and in all standard shapes and sizes. Write for literature on subjects in which you are interested and for Metallurgical collaboration if desired.



OCTOBE

Establishment of manufacturers' ceiling prices on sales of "short orders" of high alloy castings was announced by the Office of Price Administration.

Short orders" are defined as orders where the shipping weight of the casting multiplied by the quantity ordered does not exceed 75 pounds.

Prior to today's action, which becomes effective September 10, 1945, there was no specific price schedule on these sales of high alloy castings. Ceilings were based on the highest per pound prices provided by the regulation.

The new ceilings for high alloy castings are somewhat below those already established for steel, malleable iron, and grey iron castings, because fixed "short order" costs are covered more quickly, OPA said.

"Short order" sales were, generally speaking, made at a loss, OPA said, and this action is designed to help manufacturers of high alloy castings to avoid these losses and to encourage buyers to order castings in quantities in excess of

(Amendment No. 2 to Maximum Price Regulation No. 214-High Alloy Castings.)

### EXPRESS CONCERN OVER TIN CONSUMPTION

1 1. 1

Tin controls must be continued until a sufficient reconversion supply is obtained from the Malayan Peninsula and adjacent territory, the world's principal tin source, War Production Board officials informed members of the Tin Plate Industry Advisory committee at a recent

Officials of the Tin-Lead-Zinc Division disclosed that they had already requested the military authorities to furnish all available information at the earliest possible moment on the condition of the tin mines in the Far East and available pig tin stockpiles in that area.

Tin mill products requirements principally tin plate in the fourth quarter will be approximately 840,000 tons minimum compared with 933,000 tons in the third quarter. The fourth quarter figures included 575,000 tons for food containers; 20,000 tons for bottle caps; 25,000 tons for other types of closures; 6,500 tons for home canning; 40,000 tons for Canada; 95,000 tons for lend-lease and about 70,000 tons for all other uses.

The recently announced cutbacks in naval shipbuilding programs may reduce bronze requirements, which in turn will cut the demand for tin for new construction, but much bronze will still be needed for maintenance repairs and operating

WPB officials expressed some concern over an increase in tin consumption in in the first six months of 1945 or at an annual rate of 94,000 long tons, compared with tin consumption of 90,000 long tous

7×MORE=PLENTY!

Up to 7 times more wear than the ordinary work-glove! That's the economy record of Jomac Industrial Gloves in leading shops and foundries. Protecting workers' hands with their cushiony, loop-finished cloth . . . saving man-hours and stepping-up production by reducing injuries. Jomac Gloves are washable, too . . . can be laundered repeatedly! Also available in special Heat- and

Flame-Resisting styles.



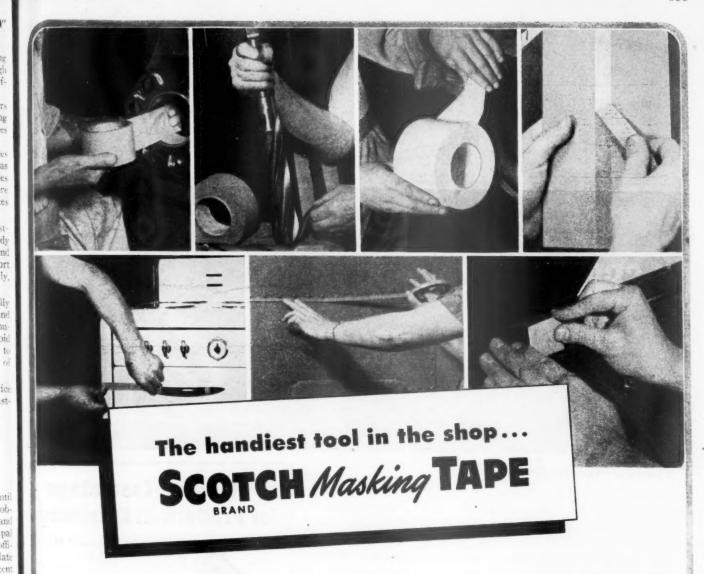
TRY JOMAC GLOVES - Test them in your own shopon your toughest jobs. Check them for wear, for washability, for increased production. Write for full details. C. WALKER JONES CO., Philadelphia 38, Penna.

JOMAC'S LATEST CREATION - Safety GAUNTLET-CUFFS. Now, you simply replace worn glove without the expense of buying full gauntlet.

# JOMAC INDUSTRIAL GLOVES

Three Types of Jomac Gloves

REGULAR INDUSTRIAL TYPE . HEAT- AND FLAME-RESISTING . SAFETY GAUNTLET-CUFFS





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"SCOTCH" Tapes
are used for
MASKING
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No other tool available to industry is so versatile, so perfectly suited to the variety of requirements encountered in Masking, Protecting, Holding and Splicing metals, plastics, glass, wood, fabrics and paper products. "SCOTCH" Masking Tape is made with a range of backings wide enough to provide a specific tape to fit each particular type of job. There is no need to "settle" for a tape that is too thick—too thin—or one with an adhesive unsuited to the specific job in hand. There is a "SCOTCH" Masking Tape that will cover all requirements of any specific job.

At your service is the priceless experience we have gained as originators and developers of unified pressure sensitive tapes. To obtain this help with your tape problems fill out and mail the coupon below.



"scotch" is the trade-mark for the adhesive tapes made by M. M. and M. co.

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2	Gentlemen: Please have your "SCOTCH" en	ngineer call. P1045
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OCTOBE:







"Cold-forging" - proof #34 ... more each month

### It Pays To Plan Early:

... because the right fastening planned in the product design stage can well be the one remaining factor essential to the speed and success of that vital assembly job-no assembled product can be better than its fastenings.

... because early action allows time for an exacting choice -your choice must be either a standard fastening or a part specially designed to meet your specific need.

## It Pays To Choose Scovill:

...because we can help you - our broad experience in fastenings qualifies us as specialists to aid you in that selection. Our demonstrated ability in special design\* makes Scovill your logical choice.

... because our skill in special design, our special processing plus our ingenuity in cold-forging means a substantial saving in money - materials - motions.

## Call A Scovill Fastenings Expert Today

\*Above is illustrated one of many special-purpose items—proof of Scovill ingenuity in cold-forging and ability in special design.

## **3 Standard Fastenings** for Production Efficiency



Phillips Recessed Head Screws-The modern, effective, time-saving fastening device proven in tens of thousands of assembly lines. Other standard head styles are also available.



2 Self-Tapping Machine Screws—Eliminate separate tapping operations for fastenings to castings, heavy gauge sheet metal, and plastics. Also available with Phillips Recessed Head.



Washer-Screw Assem-Washer-Screw blies - When use of lock washers is indicated, the timesaving of pre-assemblies is obvious. Also available in standard slotted head styles.

SCOVILL MANUFACTURING COMPANY

WATERVILLE

SCREW PRODUCTS

DIVISION

WATERVILLE 48, CONN.



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NEW YORK, Chrysler Building - DETROIT, 6460 Kercheval Avenue - CHICAGO, 135 South LaSaile Street - PHILADELPHIA, 18 W. Chelten Avenue Building PITTSBURGH, 2882 W. Liberty Ave. - SYRACUSE, Syracuse - Kemper Insurance Bidg. - LOS ANGELES, 2627 S. Soto St. - SAN FRANCISCO, 434 Brannan St.

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# Note the Sad Resemblance?



THE LITTLE GADGET is a metal insert—for your plastic part, perhaps. It's likewise the monkey wrench in the works of many a molding and delivery schedule. But not to us and our customers!

We produce inserts right in our plant. And we cut out snarls in shipping—misunderstandings about materials, methods, dimensions or tolerances—and difficulties in meshing insert and molding schedules. In fact, that resemblance we mentioned

doesn't even exist here at Kurz-Kasch.

This is another evidence of our policy of shouldering complete responsibility for your plastics molding job—and that goes for every step from design to delivery. We offer, too, one of the largest, best-equipped custom molding plants in the country—plus one of the oldest and most respected records in the industry for furnishing plastic parts to American industry.

Our front door is open, and we're interested in what business we can fit

in. If you have an interest in plastic parts molded by compression or transfer, let's talk it over.

"A Businessman's Guide to the Molding of Plastics"

Send for your free copy of this illustrated brochure. Just write to Dept. 7 on your letterhead and we'll send it with our compliments.

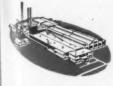


THE WAR BONDS YOU KEEP ARE THE BONDS THAT COUNT

# Kurz-Kasch

For over 28 years Planners and Molders in Plastics.

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OCTOBE

## Small Purchasing Department

(Continued from page 99)

cumulation of issuance and use data for subsequent costing. Other standard small parts are requisitioned by tab card Parts Production Release (Form 12), in duplicate, with the top sheet kept for stockroom records and delivery purposes, while the carbon copy serves to carry the record of the withdrawal back to the tabulator department. All other stockroom withdrawals are requisitioned by tab card Indirect Material (Form 13), written up in duplicate by the foreman of the requisitioning department. The duplicate card goes to the Accounting Department.

All issuances of raw stock are listed daily on the Raw Stock Issues sheets (Form 14) and then sent to Material Control to assist in maintaining the perpetual inventory record. Another form, (No. 15) "Disbursement Record of Semi-Finished Parts" is similarly kept up and sent daily, at 4 P.M., to Production Control, as a detailed record of withdrawals of parts received from sub-contractors, stored in the stockroom and under perpetual inventory in Production Control. As previously mentioned, when these are received and put into stock, the Receiving Record form (No. 8) is used for quick notification of receipt to Production Control and with the carbon sheet performing a similar function in being sent to the Machine Shop Foreman.

Formerly an annual physical inventory was made of all materials and items in the stockrooms. This meant using a large number of people for a comparatively short time, many of them being too unfamiliar with the various items for full reliability in performance. The result was that many mistakes were made. These inaccuracies have been eliminated by the system now used. The inventory by weighing, counting or measuring, is continual, so that each year, every item is inventoried one or more times, by stockroom employees who know the stock and are trained in accuracy. The resultant figures are transmitted to the keepers of the perpetual inventories for corrections or confirmations. As a result the perpetual inventories are seldom found to be at much variance from a practical accuracy. In addition, intelligent direction of this continual practice allows the counting, weighing and measuring to be done in most instances, when the stock is low and

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(Continued on page 360)

# NO CLOGGED DISPENSERS

With Turco's Hand Cleaner



## Handisan cuts grease, grime, stains-yet is milder than many toilet soaps

Because Turco Handisan is completely soluble it cannot form wasteful lumps to clog dispensers and stop up drains. It is an ideal mechanic's soap so gentle that it actually soothes bruised, chapped hands, yet so effective that it quickly removes grease, grime, ink and stains. It will not chap hands. Mildly but effectively antiseptic.

The secret is the perfect combination of granular toilet soap and an extremely fine, non-scratching and nonirritating abrasive powder. Write Turco, today

Send for free sample. Dept. P. 10

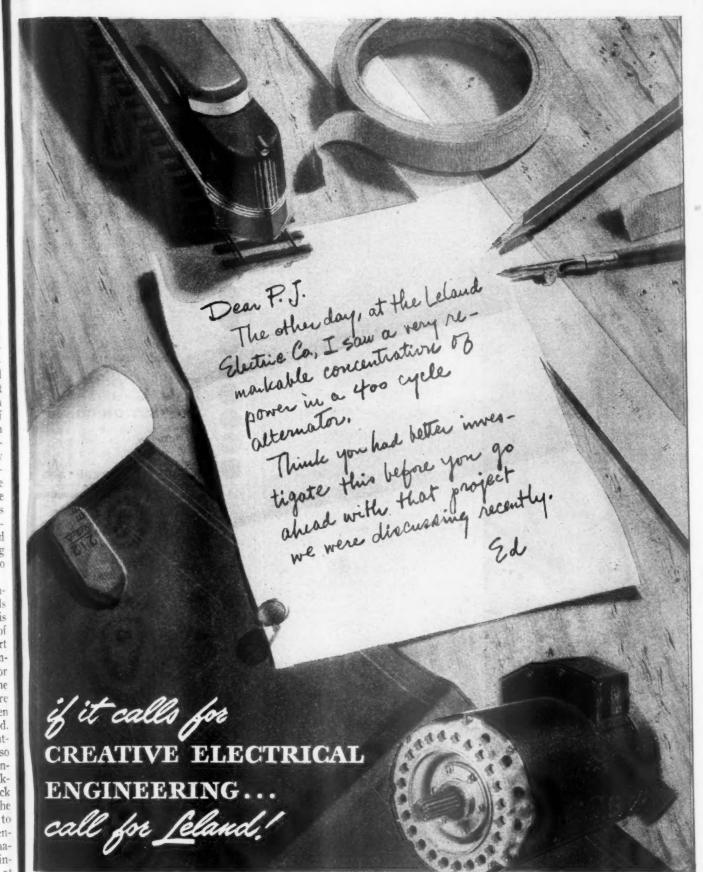


TURCO PRODUCTS, INC. Main Office & Factory: 6135 S. Central Ave., Los Angeles 1 Offices & Factories: 125 W. 46th St.- Chicago 9 - 1806 Henderson St., Nouston J., Texas New York Office: 415 Groenwich St., New York 13 - Offices & Warehouses in All Principal Cities



In this our One Hundredth Anniversary, we prize most the support of those whose patronage through the years has sustained the continuity of our business. To move with the progress of time, to keep faith with the confidence implied in every order with which we are favored, are inherent in the Curtis tradition. Since 1845, on exactly the same site, Curtis has continued to serve . . . STABILITY that merits confidence.

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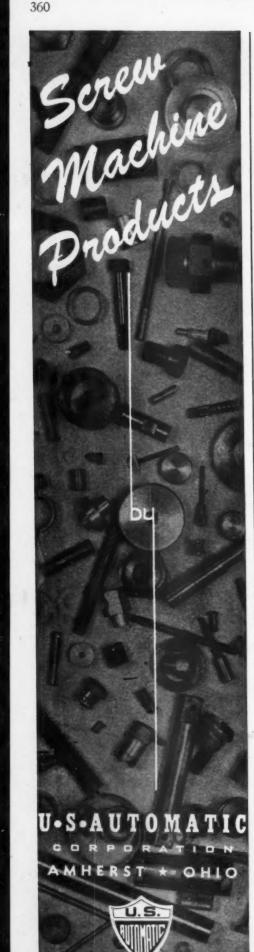
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THE Leland ELECTRIC COMPANY.

DAYTON, OIHO • IN CANADA, LELAND ELECTRIC CANADA, LTD.... GUELPH, ONTARIO

Осто



### Small Purchasing Department

(Continued from page 358)

when stockroom men may have little else to do.

Cannon Electric Development Company, sales, research and development, with the Cannon Manufacturing Corporation, manufacturing, have been built up by James M. Cannon, owner, from a start, 30 years ago, in a little backyard shop costing \$100. His son, Robert J. Cannon is General Manager of the company. After tough and precarious going in the depths of the depression, orders for the first Cannon Connectors to be used in aircraft were received from the Douglas Aircraft Company in 1933. Lockheed soon followed Douglas and since that time the growth of the business has been somewhat proportional to the growth of aircraft production.

## Eight Ways to Efficiency

(Continued from page 117)

safety factor.

Under the guidance of the Naval Ordnance Materials Handling Laboratory a variety of experimental pallets have been built of wood or metal, or both, using rivets, bolts, welds, and even certain new types of adhesive. All are designed to be handled by fork trucks, hand pallet trucks, and cranes. The best of these pallets can be expected not only to provide new conveniences in handling, but to last a lot longer than the ordinary ones in service today.

#### GOLF BALLS ON THE WAY

Civilians will get new golf balls for the late fall and winter golfing season in the south and west, the United States Rubber Company reported today.

Production will be started shortly and stepped up as materials and manpower become available. Peak production is expected by early spring.

The new synthetic rubber balls give about 95 per cent as much distance as the prewar ball. They are better than reprocessed balls.

The United States Rubber Company has been making limited quantities of golf balls for use by the Army and Navy in rehabilitation and recreation camps throughout the world. Production will be continued along with the gradually increasing civilian production.

Balls will be scarce until the long-empty "pipelines" can be refilled, it was pointed out.

## **NOW! Check and**

## REPAIR

MASONRY CHIMNEYS

## **WATER TOWERS**

Trained crews. Most modern equipment. Complete facilities.

All work covered with Workmen's Compensation and Public Liability Insurance.

Write for full information and dates when crew will be in your locality.

High Structures Division

PROTECTION CO., Inc. Approved Lightning Protection Systems

Dept. PN, 11 No. Pearl St. Albany, N. Y.

Offices in New York and other cities **NEW YORK CITY PHONE MU 9-8897** 



The DI-ACRO Bender makes perfectly centered eyes from rod or strip stock at high hourly production rates. Both

DI-ACRO

BENDER

ing radii.

"DIE-ACK-RO"

NO. 1

eyes and centering bend are formed with one operation. Any size eye may be formwithin capacity of bender and ductile limits of material.

Send for Catalog "DIE-LESS" DUPLICATING buplicating showing many kinds of "die-less" duplicating produced with DI-ACRO Benders, Brakes and Shears. DI-ACRO Precision Bending is accurate to .001" for duplicated parts. DI-ACRO Benders bend angle, channel, rod, tub-

ing, wire, moulding, strip stock, etc. Machines are DUPLICATING easily adjustable for simple, compound and reverse bends of vary-DI-ACRO IS PRONOUNCED

305 EIGHTH AVE, SO., MINNEAPOLIS 15. MINN.

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Pipe i

# PUBLIC-the Preferred Pipe for



The superior bending qualities of Republic Pipe make a big difference in jobs like this where 207 bends are required in installing 2500 feet of 34" pipe for radiant beating.

Here's just the pipe for radiant heating jobs - and there are several good reasons why:

- 1. MEETS EVERY REQUIREMENT for many years, steel pipe has been the standard pipe used in closed system heating lines. Thus, Republic Steel Pipe meets all requirements for radiant heating, which is a closed system, too.
- 2. SUPERIOR BENDING QUALITIES—high in ductility and free from hard spots in the metal.
- 3. SOUNDLY WELDED made by Republic's improved continuous weld process, this pipe is so tightly

- welded that it will not open even under severe bending strain.
- 4. WELDS READILY—makes sound joints by all modern methods.
- 5. LONG LENGTHS—reduce number of joints.
- 6. NO SCALE-inside or outside.

For further information on sizes available and present delivery schedules, see your Republic Pipe Jobber.

REPUBLIC STEEL CORPORATION GENERAL OFFICES CLEVELAND 1, OHIO Export Department: Chrysler Building, New York 17, New York

This and similar advertisements in Architectural Forum, Architectural Record, Domestic Engineering, Engineering News-Record, Plumbing and Heating lournal, and Heating, Piping and Air Conditioning arry the story of Republic Pipe to your customers nd prospects every month.

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#### GENERAL'S

"Part of the Product" Plan

**GENERAL Engineered Ship**ping Containers are designed to the product. Frequently the product and the container come off the production line together—as a unit.

Result: You save space, materials, man-hours and packing costs.



ral All-Bo

Send for "The General Box" - this booklet illustrates General Box Company's"Part of the Product" Plan.



ENGINEERED SHIPPING CONTAINERS

#### General BOX COMPANY

GENERAL OFFICES: 48 W. Illinois St., Chicago 10, Ill. DISTRICT OFFICES AND PLANTS: Brooklyn, Cincinnati, Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, New Orleans, Shebaygan, Winchenden.

Continental Box Company, Inc.: Houston, Dallas.

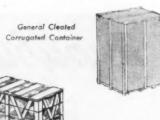
Yards and yards of material of the finest sheerest silk-carefully, almost religiously wrapped-provide the trim, tight-fitting turban of the celebrated Sikhs.

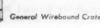
Its claim to fame is that it is unique, distinctive. It certainly is not practical or serviceable nor in keeping with the quick tempo of the times. Likewise, many fine products are also packaged in outof-date containers that are costly and laboriously assembled.

Bring your packing problems to us. Our engineers will be glad to help you design a modern container that really protects your product, that is actually a "part of the product."

Learn how you too can cut costs, conserve man-hours and speed production. It's a story of vital interest to you. Write today.







#### How Can the P. A. Help the Salesman?

(Continued from page 104)

quickly as possible, from the local representatives.

To emphasize the success of this procedure, I have two interesting examples to cite. I received an inquiry on the subject of a portagraph. The following self-explanatory memorandum was immediately sent to the interested person "Subject: the interested person "Subject: Portagraph. File Reference: Remington-Rand Company, Waterbury, Conn. With reference to your inquiry for photographic records to be made on a portagraph, it is suggested that you see Mr. Baker of the Engineering Department. We have had here in the plant for a number of years a small portagraph and just recently have purchased a large vacuum type which will take care of a blueprint 30" x 40". If the actual equipment upstairs isn't sufficient information for you, I will be glad to call in Mr. Goldsmith or Mr. Heiman out of the Waterbury office of Remington Rand and get any further information you may wish. I believe Mr. Heiman and Mr. Goldsmith will be in most any day now and if they do stop in I will call you."

#### A Mutual Problem

The other interesting experience dates back to the period previous to our starting this new routine. One of our employees sent out several inquiries under his own signature without calling on us for service. In response to these inquiries, we had three salesmen call the same dayon the subjects of material handling. machine tools, and office equipment. All of these gentlemen who called were acquainted with us and we had in our files complete data on their products and happened to be quite familiar with those products. called in the gentleman who desired the information so that he could get it first-hand, but the next day I sent him the following memorandum: "I would appreciate it very much if when you are interested in something new that you send us the Form 3494 on the subject of Know-How Information. Do call on us in the future as I know that we can help you and save you time.'

These two examples definitely illustrate how the Purchasing Agent can help the Salesman and the Advertising Manager. I hope the interest in this routine continues be-

(Continued on page 364)

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A new dependable

### SOUND DEADENER

for metal doors and panels

WITCO #1085

VIBRATION DAMPENER



Formulated to obtain maximum deadening effect with minimum weight. A coating of ½ pound per square foot dampens at the rate of 12 to 14 decibels per second at temperatures from 20 F to 80 F.

This product meets all requirements for adhesion and freedom from slumping... provides a fungus-proof coating that protects against water, acid, and salt corrosion... seals seams and cracks... air dries to handle in one hour, hard in four hours. It may be sprayed or troweled over bare, slightly oily, primed, or painted metal surfaces.

Technical data and full information on Witco #1085 Vibration Dampener will be furnished on request. Also its companion product—abrasion resistant Witco #77 Metal Protector for use on fenders and under-chassis parts. Call or write today.

WITCO CHEMICAL COMPANY

435 N. MICHIGAN AVE. CHICAGO 11, ILL.

ESTABLISHED

7338 WOODWARD AVE. DETROIT 2, MICH.

# "THERE'S AN EXTINGUISHER EVEN I CAN USE!"



Employees are your real fire-fighters . . . and the fire extinguisher is their most effective weapon.

That's why safety men, everywhere, have made their fire defense easier and faster—with Randolph "4". Just ONE HAND snaps this extinguisher from its bracket . . . one trigger-touch sends fire-killing carbon dioxide deep into the blaze—in split-seconds!

A dry, odorless gas, carbon dioxide cannot damage equipment or conduct electricity. It leaves no stain or mess... actually disappears when the fire is out! Approved by Underwriters' Laboratories.



# Randolph simplifies

FREE! Send me your new, 16-page booklet "Sharp-shooting at Flames." Illustrates how to fight fires and protect property with fast-action carbon dioxide gas.

Name		

Address\_\_\_\_

RANDOLPH LABORATORIES CHICAGO 11, ILL., U.S. A.

Salesman
(Continued from page 362)

cause it certainly is proceeding in the right direction.

The real value of the Purchasing Agent is found, however, in his commercial knowledge of markets, of materials, of values, and of people with whom he deals, plus the experience gained from past operations, and his ability to forecast as accurately as possible, the future. You gentlemen, as Advertising Managers, can help us greatly in obtaining this knowledge. In the same way, I am sure, that the Purchasing Agent can help the Salesman and the Advertising Manager. What do you think?

And now let me ask you some pertinent questions. Do you really know the functions of your own Purchasing Department? Do you know the methods of purchasing which your own company employs? Do you know how your customers buy? Do you ever show your Purchasing Agent your advertising plans to get a reader's viewpoint? The Purchasing Agent is only too willing to co-operate and help you. Won't you try him?

How Purchasing Functions in

Product Design
(Continued from page 87)

in the meantime other new machines are coming along and the Purchasing Agent is working with the prospective suppliers of their parts.

Field Work Encouraged

One of the problems in some textile fields is the lack of progressiveness of textile mill owners who do not like to change their machines or their methods.

The Purchasing Agent of a textile machinery manufacturer encourages the makers of superior parts and supplies for his machines to go out among the mills and sell the mill owners. This is a companywide policy, not merely a Purchasing Department one. It results in some loss of repair parts sales to the company, although many of the devices offered are accessories to the company's machines rather than repair parts for them. But it encourages the sales pressure of many strong companies to be applied to

(Continued on page 366)

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These are the lasting benefits your customers get from products made of Armco Stainless. They mean more sales for you — and more satisfied customers.

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Yet sales-appeal is not the only advantage you get from Armco Stainless Steels. They are easy to fabricate. They form readily and can be drawn as much as 50% without rupturing. Either gas or electric welding methods may be used.

Write us for more information on



specific grades of Armco Stainless for your new products. The Ameri-

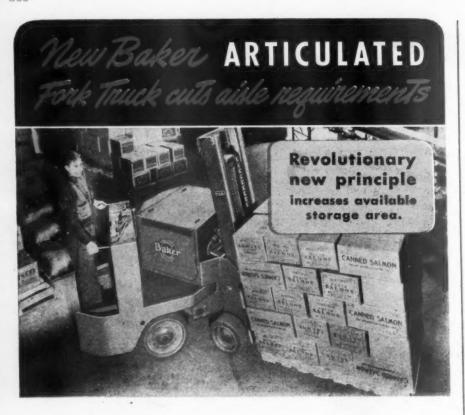
can Rolling Mill Company, 2801 Curtis Street, Middltown, Ohio.

#### A FEW PHYSICAL PROPERTIES OF ARMCO STAINLESS

Armco Grade	Ultimate Tensile Strength, psi.*	Yield Strength psi. (.2 %)	Scaling Temp. °F.
17-7 (Type 301)	110,000	40,000	1600
18-8 (Type 302)	90,000	35,000	1650
18-8 (Type 304)	85,000	35,000	1650
20-10 (Type 308)	90,000	35,000	1800
18-12 Mo (Type 316)	85,000	40,000	1650
25-12 (Type 309)	95,000	45,000	2000
18-10 Ti (Type 321)	90,000	35,000	1650
18-10 Cb (Type 347)	90,000	40,000	1650
13 (Type 410)	65,000	35,000	1250
17 (Type 430)	75,000	45,000	1550
27 (Type 446)	80,000	50,000	2000

\*ARMCO High Tensile Stainless Steel meets specifications requiring yield strengths as high as 140,000 psi. and tensile strengths up to 185,000 psi. min.

THE AMERICAN ROLLING MILL COMPANY



## DESIGNED PRIMARILY FOR EFFICIENT WAREHOUSE OPERATION

A basically new design\* involving a new method of steering by "articulating" the frame, permits swinging the load to line it up in position without lining up the truck itself. Thus this truck requires about two feet less space for placing loads at right angles to aisles. It needs less clearance on turns, and speeds carloading or any other handling operation where loads must be lined up or positioned in congested areas.

Specific advantages of this truck are:

- 1. Works in narrower aisles.
- 2. Turns in a smaller radius.
- 3. Spots loads quicker and easier.
- 4. Control units are more accessible.
- 5. Simpler Steering design cuts maintenance.
- Permits mechanization of handling where hand trucks were necessary because of space limitations.

Field tests in both warehouse and production operation have proved the many advantages of this new truck. For complete specifications request Bulletin 1330.

\*Licensed under Stevenson Patent No. 2,284,237



BAKER INDUSTRIAL TRUCK DIVISION of The Baker-Raulang Company
2148 West 25th Street • Cleveland, Ohio

In Canada: Railway and Power Engineering Corporation, Ltd.



#### How Purchasing Functions in Product Design

(Continued from page 364)

create modernization mindedness among the mills. If the company had to carry this burden all alone in regard to its own machines and their parts, the loss of sales of improved (and therefore high profit) items would be great, and the company would find itself selling too high a proportion of items on which the patents had run out and the competition was free to cut prices to the loss point.

The Purchasing Agent is the spearhead of this policy because he is the one who meets the representatives of the suppliers and parts makers. He leads them to go direct to the mills by placing large volume orders with the companies which have the best acceptance by the mills.

The reasons why Purchasing Agents take an important part in the selection of materials for new products, then, range all the way from the hard realities of costs and of production methods to the artistic factors of style and the psychology of changing the character of a market for the company's products. In any case the influence of the Purchasing Agent is highly important, since he alone is in best position to search and research the supplying market.

#### Shankless Drills

(Continued from page 91)

voted to driving (the shank), makers of shankless drills have cut manufacturing costs; prices to the user are 20% to 30% under those for corresponding taper-shank drills. In the conventional drill, the shank must be discarded when the point and flutes are worn out, whereas the drill driver is used throughout the lives of many drills.

Shankless drills, being twisted compare favorably in strength with the conventional types. The web or center section of the drill, is uniform in thickness rather than increasingly slender toward the point of the drill. Twisting the metal, as compared with machining it on a milling machine, preserves the grain of the steel; the grain lines are not cut at regular intervals, but curve with the spirals like the twisted fibres of a rope.

(Continued on page 370)

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# It's Easy to Buy REPUBLIC RUBBER 2 wality Products

PARTICIPANTS IN THE
OWNERSHIP AND OPERATION
OF
NATIONAL SYNTHETIC RUBBER
CORPORATION

RDER mechanical rubber products from your local Republic Distributor. He is your neighboring businessman and he is qualified to serve you. In most instances, the Republic Distrib-

utor can fill orders right from stock—in special cases he gets the factory to build products to your needs. Through these distributors, Republic Rubber products are available throughout the country.

BETTER THAN BEFORE

# REPUBLIC RUBBER

RUBBER & TIRE CORPORATION

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REPUBLIC INDUSTRIAL PRODUCTS



LEE DELUXE TIRES AND TUBES

## the winner that never scores

For reciprocating-rods, the winning packing is the one that never scores.

That's why experienced maintenancemen for more than forty years have been picking non-scoring R/M packings for trouble-free service on pumps and stuffing-boxes.

For thousands of other kinds of industrial equipment, R/M packings are doing a winning job. Made of specially chosen materials, designed to meet the particular needs of different types of service, they are available in a complete range of sizes, and in coil, roll, spiral, bulk, and flat form. If you have special packing needs, we will make any shape you require.

Ask your distributor for the catalog on the complete R/M line.

HC

It's "Packed with Satisfaction"—When You Use R/M



INDUSTRIAL SALES DIVISION

RAYBESIUS-MANHATTAN

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Manheim, Penna. · Bridgeport, Conn. North Charleston, S. C. · Passaic, N. J. 6.

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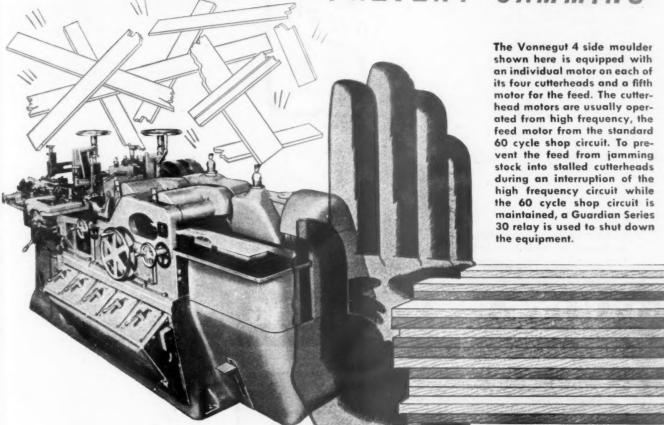
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# TELAUS IN MACHINE CONTROL

PREVENT JAMMING



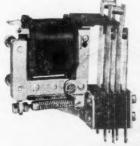
HOW Relays BY GUARDIAN

provide automatic SHUT-OFF... conserving materials and equipment

Wherever two or more independent sources of power are utilized to perform one operation, the failure of one power source presents a hazard to safety, materials and equipment. In such places Relays by Guardian are often employed to interrupt all other circuits when one circuit fails.

The Vonnegut 4 sided moulder, built by the Vonnegut Moulder Corporation of Indianapolis, uses a Guardian Series 30 relay in this application. This is a quiet, dependable relay with a laminated field piece and armature, a large contact switch capacity, and a wide operating range. It is available for operation on any frequency between 20 and 150 cycles.

But whatever your relay application may be, it will pay you to write. If you describe your application when writing, Guardian engineers will make recommendations.



Series 30 A.C. Relay Also, iron clad and laminated solenoids, stepping relays, magnetic contactors, electric counters, snap and blade switches.

#### It has not been easy . . .

. . . during these hectic war years to maintain our reputation for highest grade service. However, the Oakite organization's policy of strategic nation-wide spotting of Technical Service Representatives has been successful in fair and equitable distribution of the Oakite "knowhow, show-how" service. This sound planning assures you of full Oakite efficiency from the start . . . your Oakite Representative is readily available to assist you in preparing a technique of use that provides the full benefit of Oakite materials' inherent advantages.

We invite inquiries about any of the wide range of specialized Oakite detergent, acidic, solvent and germicidal materials. Our complete facilities are freely at your disposal.

OAKITE PRODUCTS, INC. 54 Thames St., NEW YORK 6, N.Y. Technical Service Representatives Located in All Principal Cities of the United States and Canada









#### Shankless Drills

(Continued from page 366)

Additional strength is provided by heat-treating the neck of the drill so that it will "give" slightly; this shock-absorber action cushions the shock of sudden torsional strains. Additional toughness of the twisted drill reduces marginal wear, providing greater precision performance throughout the life of the drill.

Because the metal is the same piece throughout the shankless drill, this type of drill has superior recovery value. In the conventional taper-shank drill, the shank is a piece of ordinary carbon steel welded to the body, which is high-speed steel. Thus the value of scrapped conventional drills is diminished be cause of the necessary separation of the two types of steel which obvious ly will not break across the weld.

#### Application on Production Jobs

Having developed and produced the twisted drill, the Ford Company has also applied it in a great number of its own production jobs. One of the most spectacular applications came when Ford manufactured the anti-aircraft gun director at the Highland Park plant. Bore drills in various sizes were needed on the director, an instrument in which a very high degree of precision is needed. Conventional drills, used at first, did not produce consistently straight and smooth holes, and this equipment was too hard on the bush-Twisted drills without any flute clearance were made for this They handled the problem with ease, and were made standard tooling for a large number of deep drilling jobs. Since then they have been used on other potentially difficult jobs with the same high degree of satisfaction and success.

Making twisted drills is relatively simple. First, rods of high-speed steel are heated, then placed in a form rolling machine. This machine rolls the rod to the shape of a finished drill, except that the stock is straight, without the spiral. It is slightly oversize, to permit finishing

to size in a later step.

Without additional heating, the rod is twisted to the proper spiral (also called "lead" or "helical angle"). Degree of twist is accurately controlled. This step replaces the costly and wasteful milling machine operation. All the metal in the rod is used, whereas the

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Here is a new fastener, the Flex V, for the smaller sizes of V-belts that is going to establish the same outstanding performance record as the Alligator V-belt fastener has already established for the larger sizes of V-belts.

This new Flex V fastener is made in two sizes for A and B section V-belts. It is simple in design, easy to apply and the separable hinge joint makes for quick replacement of V-belts without dismantling shafting or machinery. No metal touches the pulley so Flex V fastened belts can be run on a V-Flat drive.

Folder No. V-12 gives complete details on this new Flex V fastener with list prices, special tools and application information. Your request will bring a copy.

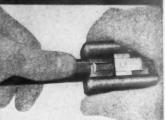
Order from your supply house

# FLEXIBLE STEEL LACING CO.

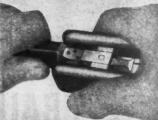
4697 LEXINGTON STREET, CHICAGO 44, ILLINOIS

Also sole manufacturers of Alligator Steel Belt Lacing for flat transmission belts. Alligator Y-Belt Fasteners for Y-Belts and Flexco HD Belt Fasteners and Rip Plates for fastening and repairing conveyor belts.

These illustrations show how easy it is to apply Flex V Fasteners



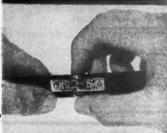
First a slit is cut in the end of the belt with the knife blade in the applicator.



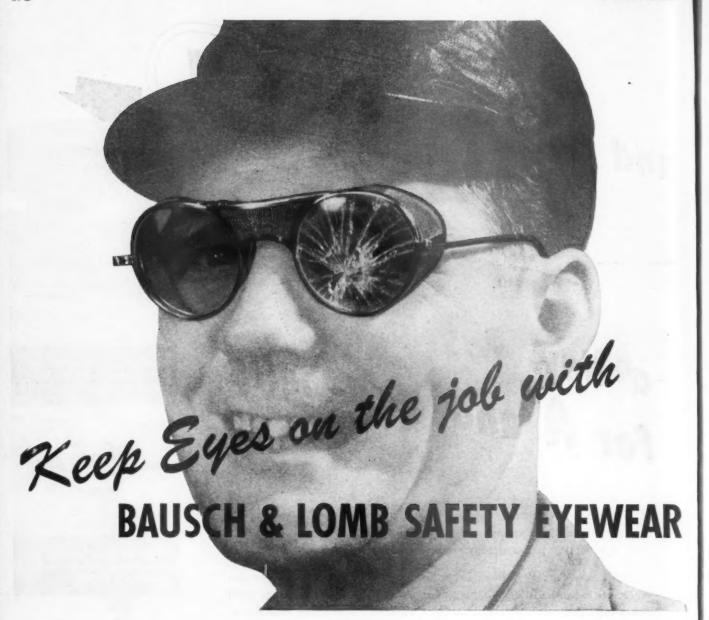
Then the lower part of the end plate is pushed into this opening in the belt.



The screws are inserted into the belt through the end plate.



The hinge pin is inserted to make the finished joint.



In more ways than one Bausch & Lomb Safety Eyewear helps to keep workers' eyes on the job!

Employees' eyes are safer behind carefully selected and carefully fitted safety glasses. With comfortable, efficient, safe vision these men and women are better workers ... able to concentrate on the job all day long.

Tough, strong safety lenses to resist blows from flying objects and lenses that protect against injurious light keep the eye accident toll down . . . prevent the lay-offs and lost time that are the extra costs of unprotected vision.

Whatever hazards exist in your plant, whatever the

visual requirements of the individual worker, the eyes of each employee can be protected with safety eyewear . . . metal spectacle type or molded cup goggle ... from the complete Bausch & Lomb line. For your employees who wear glasses for eyesight correction there are B&L prescription-ground safety lenses (single vision or bi-focal) professionally prescribed for the visual requirements of the job. Write for complete information. Bausch & Lomb Optical Co., 741 St. Paul St., Rochester 2, N. Y.

All B&L Safety Lenses now in production will be marked with this trademark . . . recognized as the symbol of the highest quality in optical products.

BAUSCH & LOMB



Safety Eyewear



## This coating leads a "double life"



LOWER COST PER YEAR. Careyclad goes on for the same labor cost as ordinary coatings, yet lasts 100% longer.



DRIES REASONABLY FIRM in 24 hours. Ordinary coatings take 2 days to 2 weeks.

arey clad by actual test delivers double the life of standard, high-grade roof coatings. Where other coatings "wear out" in 1 or 2 years, Careyclad will provide dependable protection 3 to 5 years.

Careyclad is easily applied. It provides a tough, 1-piece asbestos fiber coating for the entire roof . . . fills pinholes, voids and porous spots. Good for metal roofs, too. Maintenance is sharply reduced.

Roof-saving suggestion: Ask your Mill Supply House about Carevelad, or write-



CAREYCLAD WON'T ALLIGATOR, "pinhole" or crack . . . won't slip or drip in summer or go brittle in winter.



COMES IN 1, 5, 28 and 52 gallon containers. Order from your Mill Supply House.

THE PHILIP CAREY MANUFACTURING CO. LOCKLAND, CINCINNATI 15, OHIO



Industrial Insulations

**Asbestos Shingles and Siding** 

**Asphalt Shingles and Roofings** 

**Built-up Roofing** 

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**Roof Coatings and Cements** 

Waterproofing Materials

**Asphalt Tile Flooring** 

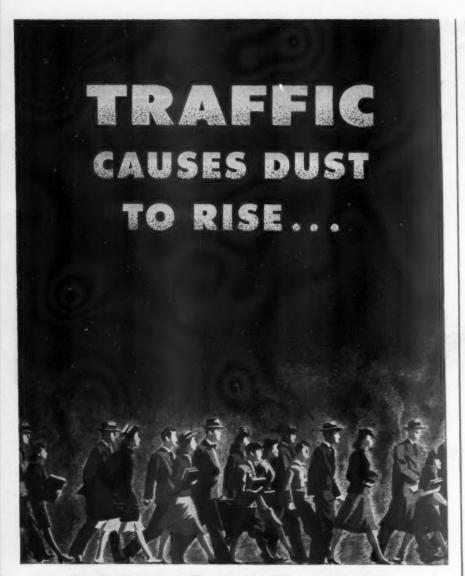
Pipeline Felt

Expansion Joint •

Asbestos Wallboard and Sheathing 

Corrugated Asbestos Roofing and Siding 

Miami-Carey Bathroom Cabinets and Accessories



### WESTONE FLOOR TREATMENT CONTROLS DUST

Westone, the chemical floor treatment in liquid form simplifies floor maintenance problems. It continuously improves floor appearance, penetrates rapidly and evenly and actually seems to become part of the floor material itself. Westone controls dust in room atmosphere because the presence of dust in room atmosphere is due not so much to open windows as it is to floor traffic. The problem is to keep the dust from rising. Westone has, in addition to its other properties, a peculiar affinity for dust and when properly used to maintain a floor, the atmosphere will be comparatively free from it because foot traffic will not cause the dust to rise. Westone is very economical to use.

Send for FREE Booklet

USTONE

ORDANA

42-16 WEST ST. - LONG ISLAND CITY 1 - N. Y. - DEPT.P

WEST

#### Shankless Drills

(Continued from page 370)

usual milling operation removes from 40% to 50% of the rod.

Desired lengths are cut off the rod with an abrasive cutting machine. In the Ford operation, drills are made up to 30 inches in length.

made up to 30 inches in length.

The drill is then rough-pointed, heat-treated, tempered, and straightened. It is quenched in an oil bath. Sandblasting removes scale and roughness. The flutes are then hand-polished and placed in a centerless grinder for finishing to a specified diameter.

The finish point grinder puts the cutting edge on the tool and shapes the point. After that, the drill is inspected to make sure that it meets required standards, including a test for hardness, and the drill size is etched on the driver end.

Use of shankless drills up to now has been restricted by the high priorities necessary to obtain them. However, as priority restrictions are removed, it is expected that use of this type of drill will be substantially expanded.

#### Secondary Uses for Materials

(Continued from page 125)

signing and testing a new plane. For quantity production, some 12,000,000 square feet of hard wood plywood, some of it mahogany, was purchased.

In the meantime, American industry was tackling the metal shortage, and about the same time the scarcity of aluminum came to an abrupt end. That obviated the need for the "Spruce Goose," and its allwood brothers, and left ATSC with a fortune in plywood on its hands.

The wood ran from 1/16 to 3/32 of an inch in thickness, and therefore could not be used for the same purposes as thicker commercial plywood. So, when the entire lot was offered for sale, the highest of more than 100 bids was \$40 a thousand feet. Rather than take a considerable licking on sale at such a price. ATSC thinkers started thinking. In due time they hit upon a plan which resulted in saving the taxpayers \$1,-260,000. They decided to glue the thin plywood on either side of a 3-ply core of inexpensive fir stock, and use the result for the boxing of AAF supplies for overseas ship ment. The plan filled an important

(Continued on page 376)

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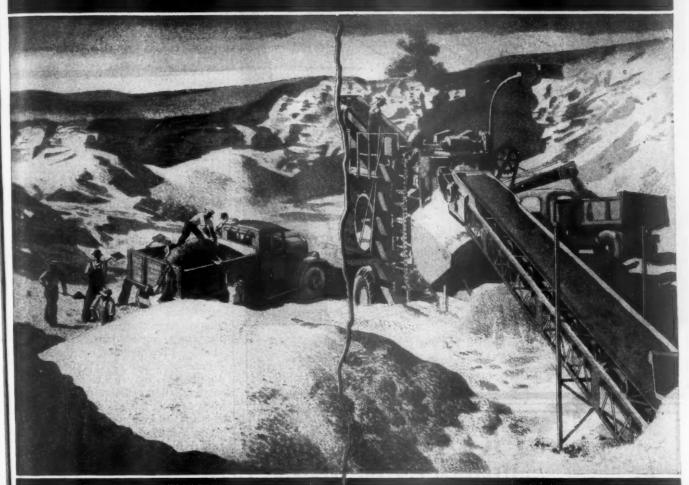
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## Many American Industries



LOADING OPERATION BEFORE THE

MODERN LOADING OPERATION USING THERMOID CONVEYOR BELTING

of American Industry. Through three wars, and the intervening periods of peace, Thermoid engineering, research and manufacturing facilities have been devoted to the improved design and production of Industrial Rubber Products. Thermoid stands today in a position, unsurpassed by any competitor, to contribute to the post-war progress of your industry. The Thermoid Line\* of belting and hose for materials handling and power transmission may contain the key to another step forward in the improvement of your process and the reduction of your costs. When you call in the Thermoid representative you'll agree with many other manufacturers that—"It's Good Business to Do Business With Thermoid."

\*THE THERMOID LINE INCLUDES: Transmission Belting •
F.H.P. and Multiple V-Belts and Drives • Conveyor
Belting • Elevator Belting • Wrapped and Molded Hose
• Sheet Packings • Industrial Brake Linings and Friction
Products • Molded Hard Rubber and Plastic Products.

Thermoid Rubber

DIVISION OF THERMOID COMPANY
TRENTON, NEW JERSEY

Contributor to Industrial Advancement Since 1880



There is the RIGHT BLADE for any job you may have, Lenox Distributors can serve you from their local stock today. AMERICAN SAW & MFG. CO., SPRINGFIELD, MASS., U. S. A.

# Look to . TRUMBULL for ELECTRICAL CONTROL APPARATUS



Electrical Wholesaler

CALL YOUR TRUMBULL

The Trumbull Company has a very comprehensive line of all types of Switches, Circuit Breakers, Motor Starters and Service Equipment. This extensive line is also provided in various types of Enclosures to meet exceptional atmospheric conditions, such as locations which require apparatus so enclosed that dust will not enter; outdoor applications, as on ships, docks, etc., that require cast iron water-tight enclosures for protection; for use in atmospheres containing black carbon, coal, coke, grain or other combustible dusts; and also, atmospheres containing gasoline, petroleum, naptha, etc.; as well as certain types in weather resisting enclosures that protect against hazards such as rain, snow and sleet.



THE TRUMBULL ELECTRIC MFG. CO. . PLAINVILLE, CONN.
OTHER FACTORIES AT NORWOOD (CINN.) O.—SEATTLE—SAN FRANCISCO—LOS ANGELES

#### Secondary Uses for Materials

(Continued from page 374)

need; the AAF was using 40,000,000 square feet of plywood monthly for boxing purposes. Only half of this amount is available in soft timber. Costly hardwood plywood makes up the difference.

And so it was that the makings of squadrons of "Spruce Gooses" were repossessed into boxing and crating materials, at a total cost (including original purchase price) of \$195 per thousand feet instead of \$300, the cost of the equivalent commercial product.

So it goes. Among ATSC elements, the Western district was perhaps first in war-demanded second guessing. Obsolete bombardier cushions, U-shaped so that the bombardier can straddle his sight, were refashioned by the district"s experts into ordinary cushions, for general use. Bombardiers' chairs became posture seats for stenographers. Jigs on which wing parts were once shaped were transformed into shoring rings, racks, bins, and engine stands. Plywood ammunition boxes, escape hatches, and floor boards, supplanted by superior products, were used to make training aids such as map holders and navigation aids for student pilots at Santa Ana Army Air Base, making use of 100,square feet of plywood which would otherwise have been a serious financial loss.

#### Other Uses for Field Shelters

Similar ingenious makeshift arrangements were made at San Bernardino Air Technical Service Command, San Bernardino, Calif. A number of field shelters which were found incapable of withstanding high winds were returned from various areas to this installation. Someone there figured out that the steel tubing and rubber wheels could be turned into cowling carts, to be used in the maintenance hangars. Seventy-four of them were manufactured. The canvas from the shelters was used for tarpaulins.

Also at SBATSC, lead from scrapped planes was made into molds for sheet metal work. Hydraulic landing gears were converted into adjusting revolving workstands for ignition harness repairmen.

Making secondary use of materials no longer suitable for their primary use is but one of ATSC's

(Continued on page 380)

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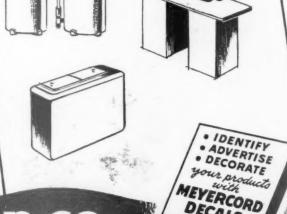
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## Use MEYERCORD DECAL Name Plates

Home equipment ruined annually in America through ignorance of operation and maintenance reaches a staggering total. The unnecessary reflection on manufacturers' reputations is equally costly. Keep your product in use . . . from one owner to another . . . with Meyercord Decal instructions. They can be produced in any size, design and number of colors for fast, lasting application to any commercial surface. No rivets, bolts or screws required. Rigid tests prove their resistance to abrasions, temperature extremes, moisture, acids and vibration. Investigate Meyercord Decals for your product instructions. Free technical and designing service. Please address inquiries to Dept. 61-10

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# AO SAFETY CLOTHING

Provides Your Workers With Complete Protection AO Safety Clothing is designed to give your workers maximum protection from head to foot. As a result of expert designing, they are comfortable to wear. High quality materials and sturdy construction insure long, trouble-free service under even the severest working conditions.

The AO Safety Clothing line includes overalls, pants, chaps, aprons, jackets, coats, sleeves, gloves, mittens and



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# SILENT WITNESS



WHERE'S YOUR PROOF... if one of your customers claims your product falls short of its performance guarantee?

formance guarantee?

HERE'S YOUR PROOF...in plain, bold, black-and-white figures on the face of a Veeder-Root Counting Device...built into your product as an integral feature of design.

For this Veeder-Root Counter, having begun to count the instant your product went into operation, presents at any time a complete, up-to-the-minute record of performance in terms of strokes, turns, pieces, trips, weights, volumes . . . or many other units of performance.

Veeder-Root Counters can be built-in, without causing basic changes in product design. Their drive connections are simple. There are types for either mechanical or electrical operation. And they can be

built-in so that any would-be tamperer will have a run for his money . . . and will be bound to leave evidence behind him.

You can avoid arguments, prevent losses, build reputation, keep friends . . . all through built-in Veeder-Root Countrol. Not forgetting that you'll be doing your customers an extra service by letting them see that they are getting out of your product all the performance which you put into it. Write.



VEEDER-ROOT INC.

Hartford 2, Connecticut

In Canada: Veeder-Root of Canada, Ltd., Montreal
In England: Veeder-Root Ltd. (New address on request)



(Continued from page 376)

savers'" responsibilities. Battered metal plane parts, chiefly those pulled out of wrecks, are sorted and sold for scrap.

Solvents are reclaimed by distillation. The aluminum scrap from the wrecks of aircraft is sold in accordance with floor prices established by the Surplus Property Board. If disposition cannot be effected in accordance with SPB regulations, the scrap is shipped to the Metals Reserve Company storage

In 1944, at Patterson Field, Ohio. headquarters of the Fairfield Air Technical Service Command, the Disposal Section retrieved \$249,846 in cash through the sale of wornout materials. These sales included aluminum, copper, brass and other non-ferrous metal scraps, \$45,291; waste paper unfit for packing purposes, \$11,628; iron, steel and various other ferrous scrap, \$28,755; kindling, \$5,227; mess hall grease, bones, garbage and other refuse, \$6,008.

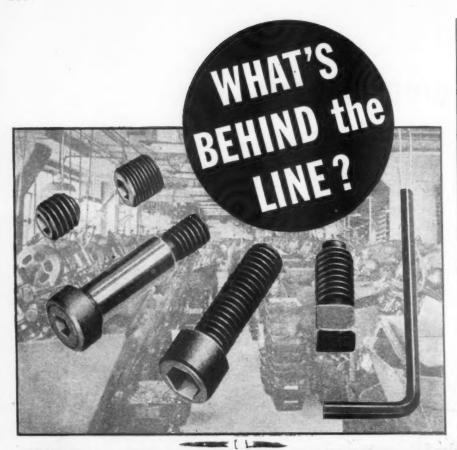
#### Some Cash Returns

In addition, 775,000 pounds of aluminum, valued at \$22,805 was shipped to the Metal Reserve Company during 1944, and materials reclaimed from salvage and either returned to use or turned over to various federal disposal agencies were valued at \$113,000.

M/Sgt. Oliver R. Vincent, of the regular army, first undertook Patterson Field salvage activities in 1940, for which he was recently awarded the Legion of Merit. His citation said:

'During the period, 1940-42. when a thorough program of salvage had not been established, his ability to foresee the need and possibilities in salvage brought about an early and well organized program. Because of the early preparations and constant impressions upon all department heads, more than one million pounds of paper products are now being salvaged monthly. For this the government is receiving about \$12,000 monthly . . . He has been highly commended by the War Production Board for his outstanding contribution to the war effort.

Not glamorous or exciting work, MANY † but it is another job which men TIANTAT throughout the country have done throughout the country have done, to bring the day of victory closer and to reduce the cost of victory.



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The facilities of The Chicago Screw Co. include the finest precision equipment, designed and built to maintain the very closest production tolerances. This modern machinery plus laboratory facilities plus the latest type automatic gauging devices, adds up to a uniformly accurate product ideally suited for quick and trouble-free assembly.

#### Chicago "SAFETY PLUS" Line includes:

Socket Head Cap Screws . Socket Set Screws . Stripper Bolts . Square Head Dog Point Set Screws . Socket Pipe Plugs . Keys for Socket Screw Products.

#### Complete Line includes:

Hexagon Head Cap Screws . Square Head Cup Point Set Screws . Headless Set Screws • Fillister Head Cap Screws • Flat Head Cap Screws • Taper Pins Milled Steel Studs . Semi-Finished Hexagon Nuts.

On your future requirements, specify Chicago Standard Screw Products. They are unsurpassed for the needs for which they are made.



These Fine Products are sold only thru Authorized Distributors



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### Wasting weeks...when hours count?

Sometimes you can't afford to spend days waiting for technical data or a mill shipment to arrive. And you needn't - if it's a question of brass. There's a Chase Warehouse or Sales Office near you equipped to handle your brass purchasing problems, and make shipments from stock. Take advantage of this complete sales service right in your locality. Call Chase to save time, and avoid costly production delays.

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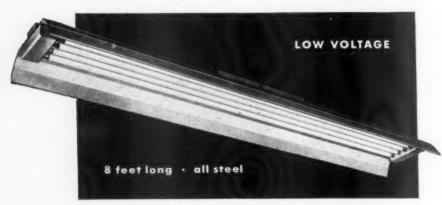
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# \*COLOVOLT COLD CATHODE INDUSTRIAL FIXTURES



Here is the new Colovolt industrial fixture, one of a complete line of industrial and commercial "packaged" units. Equipped with the standard 93" Colovolt 10,000 hour lamp, Colovolt fixtures may be used singly or in continuous line lighting in multiples of 8 feet. Instantaneous starting, no flickering, guaranteed for 1 year ex-

cept for failure due to breakage are extra advantages of the Colovolt Cold Cathode low voltage fluorescent lamp. The long life expectancy of Colovolt lamps may be realized even when constantly turned on and off, and pre-scheduled re-lamping, with no loss of production or time, is now possible with Colovolt installations.

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GENERAL LUMINESCENT CORPORATION
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#### Cellulosic Plastics—the Big Four

(Continued from page 110)

material. Also you are probably most familiar with ethyl cellulose as the dip-it strip-it packaging material recently described in Purchasing Magazine.

Ethyl cellulose is also an excellent molding material. It is comparatively new and production has been almost entirely for war needs, Its outstanding characteristics as a material for plastics products are decided toughness, excellent di-mensional stability, high impact strength, surface hardness, and good water resistance. It is especially valuable in applications where sub-zero temperatures are met. Some compositions retain their flexibility at temperatures as low as -70° F. Ethyl cellulose has good electrical qualities. Though it will burn in open flame, formulations can be made fire resistant. It is resistant to alkalis, dilute and concentrated, and to salt solutions, though it is more sensitive to acidic materials than the other cellulose materials previously described.

Ethyl cellulose plastics can be injection molded, compression molded or extruded. They are also available for fabricating purposes in the form of sheets, extruded shapes, and tubing, and films and foils. They may be machined with the tools used for wood or cellulose plastics. They may be had in almost unlimited color range, and transparent glossy sheets transmit approximately 95% of daylight and 90% of ultra violet light.

This product has many other industrial uses. In proper formulations it can be making shop tools by casting into wood or plastic molds. Dies, jigs, fixtures, retainer rings and other tools are readily produced. And it has varied uses in industrial coatings, adhesives and lacquers.

This versatile material is made by the following companies: Ethocel, The Dow Chemical Co., Midland, Mich.; LT Ethacel, Dod Chemical Co.; Lumarith E. C., Celanese Plastics Corporation, New York, N. Y.; Hercules Ethyl Cellulose, Hercules Powder Co., Wilmington, Del.; Chemaco Ethyl Cellulose, Manufacturers Chemical Corp., Berkeley, N. J.; Nixon Ethyl Cellulose, Nixon Nitration Works, Nixon, N. J.

If you will refer to the Plastics Comparator prepared by the Bake-

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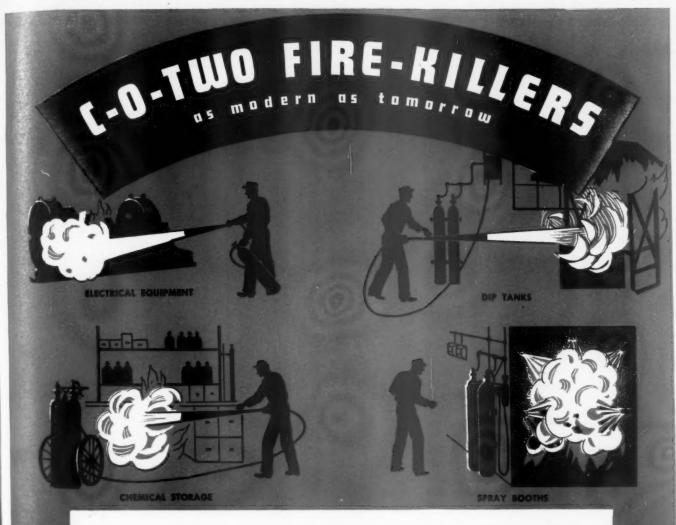
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Modern production methods operating in high gear with 'round-theclock protection against interruption or damage by fire . . . that's modern industry teamed up with modern fire protection! C-O-TWO fire extinguishing systems stand ready for instantaneous attack on fires, killing them on the spot with dry non-damaging, non-conduction sub-zero carbon dioxide gas. Plant hazards cease being potential danger spots and constant fire threats when men of vision protect lives and property with C-O-TWO equipment. Hand portables with the famous Squeez-Grip valve, fast mobile wheeled units, hose reel and built-in systems of the pressure operated type all engineered to give industry modern fire protection. Our Army, Navy and Maritime Commission are large users of C-O-TWO carbon dioxide fire extinguishing equipment which is also listed and approved by Underwriters' Laboratories and Factory Mutuals. C-O-TWO is fast, easy to operate, safe, non-deteriorating and causes no damage to materials or equipment during or after its operation. Write for information.

> C-O-TWO Kills Fire . . . Saves Lives It's Safer . . . It's Faster . . . It's Modern

NEW JERSEY



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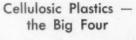
Bake-



Machining costs come down and machining quality improves when cutting fluids are selected and used scientifically. To help you use cutting fluids to better advantage, D. A. Stuart Oil Co. has available four pocket-size booklets full of information gathered from over eighty years experience.

- 1. Cutting Fluids for Better Machining. A comprehensive 60-page hand-book on cutting and grinding fluids. Contains much data on general machining as well as oils.
- 2. Grinding with Oil. Deals with the use of oils for production, precision grinding.
- 3. The 577th Oil. Contains twenty-two case studies showing results of proper oil application.
- 4. Water-Mixed Cutting Fluids. A new booklet which explains the "how" and "why" of so-called "soluble oils" and gives many tips on how to handle them.

These booklets are yours for the asking. Indicate by number which you are interested in. D. A. Stuart Oil Co. Limited. 2727-31 S. Troy St. Chicago 23, Illinois.



(Continued from page 382)

lite Corp., which appeared in the October, 1944, issue of Purchasing, you will note that the physical chemical and electrical ratings of ethyl cellulose, cellulose acetate butyrate and cellulose acetate are within very close range of each other.

No single article could possibly give you all the information you may need, or answer the questions that may come to your mind about these products. There are utility factors merchandising factors, and production cost factors, and even mold design that may determine selection of one of the four plastics described here or others in the thermoplastic group, or plastics in the thermosetting group. After you have read the oodles of technical and colorful promotion literature issued by materials manufacturers, you may logically decide that it is wisdom to submit your plastics plans to a competent molder for advice and solution of technical problems. There are so many quirks, ifs and ands, buts, goes and no-goes that the only sane procedure is to freely consult with the members of the industry that have the knowhow and the know-what.

#### Purchasing Cooperatives

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Water-Mixed

Cutting Fluids

STRAIGHT LINE TO METAL-WORNING EFFICIENCY

(Continued from page 132)

refunds available after adjustment to costs are large, as critics have complained, the farmers contend that this is clear indication that competitor prices are out of line with actual costs.

When, however, a local dealer sells insecticides for \$3 a gallon and a cooperative can make and sell it for 50 cents a gallon (an actual instance in the Louisville, Ky., area) profit margins that are out of line quickly adjust themselves to realities.

It should not be overlooked that the co-op patronage refunds remain in the community where they are earned. They go to increase bank deposits, pay the bills at the hardware and grocery store, pay the doctor and dentist, buy clothing tractors, trucks, and bring prosperity to the entire community.

Readers of this magazine do not need to be reminded of the buying

(Continued on page 388)



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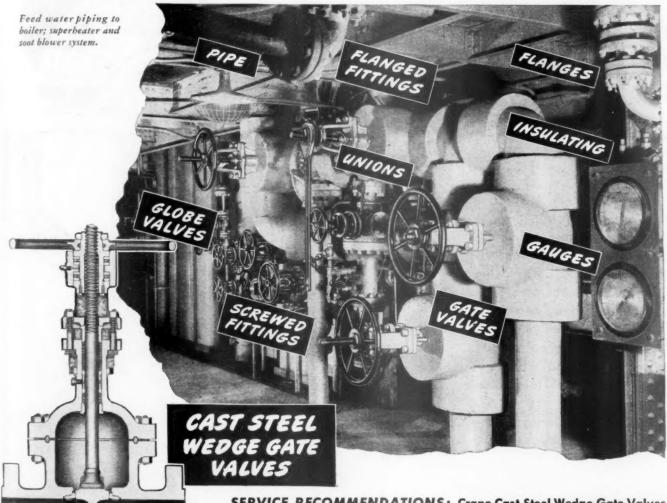
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# How CRANE Helps Solve Your Piping Equipment Problems

ONE SOURCE OF SUPPLY . ONE RESPONSIBILITY . ONE STANDARD OF QUALITY

If all piping systems worked under the same conditions, the above statement wouldn't mean much. The fact is that you alone can determine the exact requirements governing your choice of piping materials. Here is the vital distinction of the Crane line as a truly helpful service. First, Crane helps by giving you the world's most complete selection of piping equipment for all applications. Then,

by making clear the relevant advantages of
each type, Crane, with 90 years' experience,
helps you choose with complete confidence.
Ordering is simplified—your local Crane
Branch or Wholesaler supplies all your needs.
y Uniform quality in all materials—backed by
single responsibility—insures the best installation and peak performance. Stop and think
Then, how this service fits your reconversion plans.



SERVICE RECOMMENDATIONS: Crane Cast Steel Wedge Gate Valves are made for steam, water, oil, gas or air pressures up to 2500 pounds at 1000° F. The 600-pound class, shown in cross-section, with Carbon-Molybdenum body and Exelloy to No. 49 Nickel Alloy seating, are recommended for steam, water, gas or air up to 850° F. maximum; with Exelloy to Exelloy seating, for oil or oil vapor up to 1100° F. maximum; with Stellite to Stellite seating, for steam up to 1000° F. maximum. Available with screwed, flanged or welding ends in all sizes. See your Crane Catalog for specifications.

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Unibestos, the sectional insulation for all pipe sizes, permits easy application on even the most difficult-to-insulate expansion bends. Makes a clean, neat job. Unibestos is available in half-section form up to 30" pipe diameter and in quartersections from 32" to 60", in thicknesses from 3/4" to 5". Available in single layer construction for service up to 1200°.





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# Stabilizing Stabilizing STAINLESS STEEL

AUSTENITIC stainless steel exposed in fabrication or service to temperatures between 900° and 1500° F. must be stabilized to prevent intergranular corrosion embrittlement.

Titanium is the most economical of the several present methods of stabilizing stainless steel and the supply of titanium is unlimited.

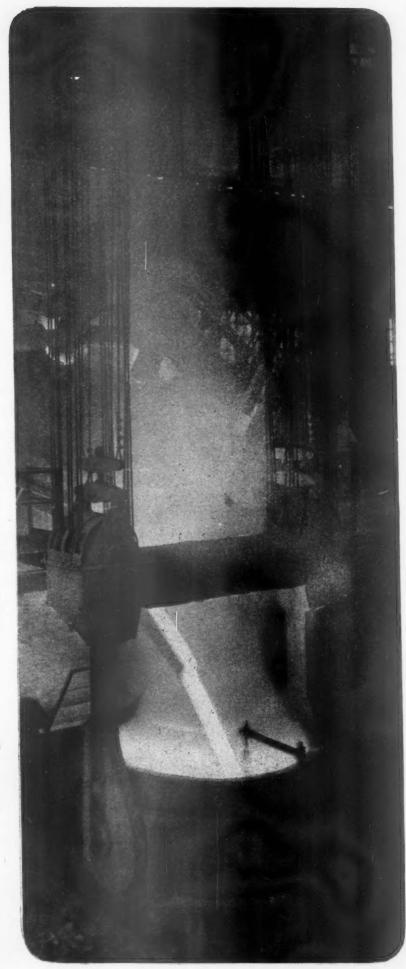
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# the SAW does the cutting . . . not the machine!

And MILFORD PROFILE SAW does it best! You can do contour or profile sawing on any vertical machine equipped with proper guides and speeds. But there is a world of difference in the saw you can use.

MILFORD PROFILE SAW is the product of a group of specialists who make nothing but metal cutting saw blades. It is made with painstaking care and the most modern equipment to do the best all-around cutting job that can be done... on any and all machines.

That's why you should specify MILFORD PROFILE SAW... and insist on getting it.

Now packed in an improved stronger box, from which the saw can be stripped free ... no binding ... no buckling.

Complete stock is carried by all MILFORD distributors in every industrial center from coast to coast...as near as your telephone.



THE HENRY G. THOMPSON & SON COMPANY

NEW HAVEN 5, CONNECTICUT

Makers of Rezistor and Duplex Hack Saw Blades

#### **Purchasing Cooperatives**

(Continued from page 384)

pools and cooperative purchasing agencies created to serve the interests of groups of department stores, druggists, bakeries, and small independent dealers in hardware, electrical goods, shoes, clothing, lumber, petroleum products and many other lines. The largest of these retailer cooperative agencies, which serves twenty-three member stores in the principal cities from coast to coast, last year handled a volume of approximately \$300,000,000, according to published figures, this being almost three times the purchasing done by GLF, largest of the farmer cooperatives.

All these retailer cooperatives are patterned on the original model of the farmer or workingman's co-op. They operate at cost or nearly so, with advantages to their retailer patrons identical to the benefits gained by the farmers. If income exceeds expenses, the surplus is, under contractual obligations, returned to patrons in a procedure identical to that followed by the farmer and urban co-ops.

These retailer-owned purchasing agencies have a stake in the fight on the farmer cooperatives. The object of this attack is to destroy the right to deduct patronage refunds on income returns, regardless of contractual obligations. Anything which threatens to assess such a tax against money owed as a legal debt endangers not only the farmer co-ops but the mutual insurance companies which operate extensively in the commercial field and the widespread purchasing co-ops as well. Thus far little interest has been taken by the latter in what is going on out in rural America.

#### Tax Exemptions

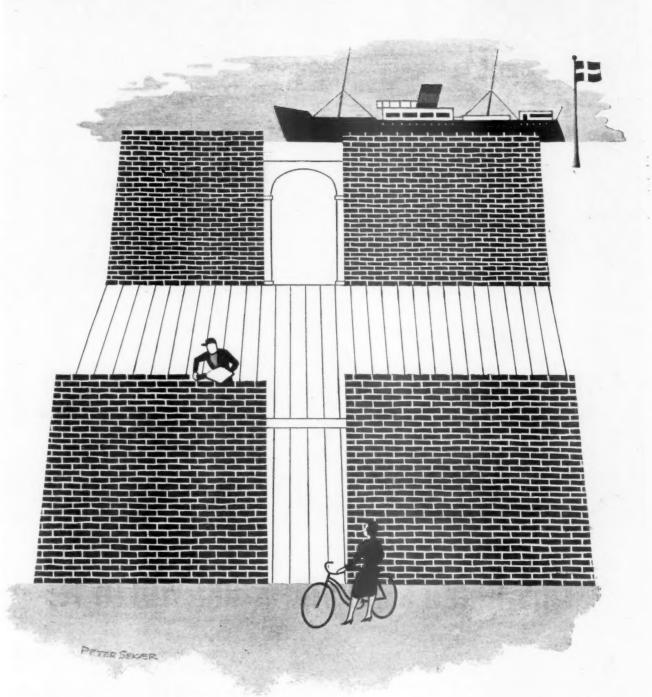
Stimulated by propaganda industriously circulated by enemies of the co-ops, considerable interest has been aroused in possibilities for converting a corporation into a co-operative, in order, as that red herring propaganda claims, "to escape corporation income taxes." According to the attorney for the National Association of Cooperatives, that possibility has "no more substance than a wisp of smoke." Moreover, he says, from a practical standpoint it is "absurd."

"If you believe all that you hear," says this lawyer, Eugene L. Hensel of Columbus, Ohio, "all you have to do is wave a wand, mumble some

(Continued on page 392)

FREI

Artist: Peter Sekaer, native of Denmark



#### FREED FLAG.

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Denmark rebuilds—aided by shipments in paperboard. Meanwhile, our laboratory experts continue their constant research to make available for peacetime needs the new and advanced packaging techniques developed to meet the demands of war.

CONTAINER CORPORATION OF AMERICA
CHICAGO AND 22 OTHER CITIES
SAVE WASTE PAPER





# This laugh's on you—and worth it!

Somewhere in the South Pacific, American boys are getting a laugh. A much-needed laugh that helps their morale. A laugh your money helps to buy—when you give to your Community War Fund.

For part of every dollar you give goes to the U.S.O. and helps send the U.S.O. camp shows overseas. And, with the millions of men now idle in occupied territories, the need to keep up their morale is greater than ever. That's why the army has asked the U.S.O. to quadruple its activities. And why your money is needed to help bring to some lonely G.I. a touch of home—the familiar face of Joe E. Brown—the friendly voice of Frances Langford—the dancing feet of Fred Astaire.

Another part of your money is spent right here at home, to help servicemen's families keep living decently, united in happiness and health. Still another part helps cheer our merchant seamen in distant ports of the world.

And it helps relieve hunger and sickness and suffering among our fighting allies.

This is a great united cause. And because the needs are so many and so great, give generously—give more than you gave last year. Make your gift as big as your heart.

Give generously to

# Your Community War Fund

Representing the National War Fund

# RDS and SPECIALS by the

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2165 SCRANTON ROAD



America's Bost Looking Cop Screw Made of high carbon steel Made of high carbon steel— AISI C-1038—to standards for full finished hexagon

head cap screws. Heads comnead cap screws, reads com-pletely machined top and bottom. Hexagon faces clean cut, smooth and true, mirror finish. Carried in stock.



Made of high carbon steel— AISI C-1038. Furnished with black satin finish due to heat treatment. Hexagon heads die-treatment, and machined. Point mamade, not machined. Point mamade, not machined. Point machine turned; flat and cham-fered. Tensile strength 130,000-160,000 p.s.i. Carried in stock.



FILLISTER CAP SCREWS

Heads completely machined top and bottom. Milled slots ees burrs. Flat and cham-fered machine point. Carried in stock.



FLAT HEAD CAP SCREWS

Heads completely machined top and bottom. Milled slots on and bottom. Flat and chamfered machine point. Carried in stock. in stock.



"SHINYTHREADS"

AIRCRAFT ENGINE STUDS

Made of highest aircraft quality alloy steel, finished to ex-tremely close thread and body

Square head and headlessoquare nead and neadless cup and oval point—case hardened. Carried in stock.



All studs made steam-tight on an study made steam-ugin on tap end unless otherwise spec. ified, with flat and chamfered point. Nut end, oval point. Car-ried in stock.



CONNECTING ROD BOLTS

Made of alloy steel-heat treated-threads rolled or cut -finished to extremely close -musned to extremely close thread and body tolerances—body ground where specified.

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step types.

tolerance, with precision rolled threads—both straight and SPRING BOLTS

Case hardened to proper dase nardened to proper depth and ground to close tolerances. Thread end an nealed. Supplied in various head shapes with all boles. nealed. Supplied in various head shapes, with oil holes and grooves of different kinds, and flats accurately milled.

VALVE TAPPET ADJUSTING SCREWS

Hexagon head style-to blueprint specifications— hexagon head hard; pol-ished if specified—threads soft to close tolerance,



FERRY PATENTED ACORN NUTS

For ornamental purposes. Steel insert—steel covered. Finish: plain, sert—steel covered. Finish: plated. Size: zinc plated, cadmium plated. Size: %6", 3", 1%6" across the flats. Tapped 1%" to 3%" inclusive.

Cross section of Ferry patented acorn nut, showing how steel hex-agon nut fits snugly in-



Pioneers and Recognized Specialists, Cold Upset Screw Products since 1907 \_\_\_\_WRITE FOR INFORMATION\_\_\_\_\_ . SEND FOR SAMPLES .

Остов

#### Purchasing Cooperatives

(Continued from page 388)

magic words and, presto, there you are 'enjoying' your tax exemption. Actually, however, it is not as simple as all that."

Only certain farmer cooperatives, Mr. Hensel explains, have even the option of actual exemption from the income tax and they get it only if they comply with rigid requirements as to corporate structure and restrictions on the scope of their activities precisely defined by law. Not all cooperatives are able to establish eligibility for exemption and many do not even file a claim for it.

To be eligible for exemption, a farmer cooperative has to be owned and controlled by bona fide farmers. Any non-farmer owner of voting stock in a corporation seeking to convert to a cooperative would thus be required to dispose of his interest, thereby bidding good-bye to prospective tax savings, to say nothing of the expectation of future profits from the business. Products handled by an exempt farmer cooperative must be produced by the farmer or used primarily in his farming operations. The newly converted co-op, if it performs a marketing service, would be limited to selling food or fiber produced by bona fide farmers. In the pur-chasing field it would be obliged to abandon its trade with non-farmers. except for an amount not exceeding 15% of its business with farmers.

All this, Mr. Hensel points out, scarcely encourages any corporation to "turn co-op" just to secure a tax-exempt status. Obviously, the whole idea, inspired by enemies of the co-operatives, is, as he says, "absurd."

It is to be expected that there will always be some larceny-bent souls, eager to explore the easy money opportunities so eloquently suggested in the widely circulated rumors about "big mail order house," "big corporation," "big west coast fruit and vegetable cannery," etc., which, according to the glib "report," is pondering conversion to the cooperative form. Mr. Hensel's study of the statutes and court action, however, warrants flashing of the caution light.

"The courts," he says, "have always been alert to protect investors in a profit business from loss through a change to the non-profit cooperative form and to tear the mask off pseudo-cooperatives seeking a legal loophole for tax avoidance. Quite consistently attempts at

(Continued on page 396)



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absorb all the punishment they can get, and more. But mainly, they're built to DELIVER . . . perform to specification, and stand up for the long pull as well. Both now, and after the war, we will continue to supply the best. Call us for information.

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Fig. 1708—Bronze Globe Valve for 200 pounds W.S.P. Screwed ends, union bonnet, renewable seat and regrindable, renewable, wear-resisting "Powellium" nickel-bronze semi-cone plug type disc.

Fig. 1793—Iron Body Bronze Mounted Gate Valve for 125 pounds W.S.P. Flanged ends, outside screw rising stem, bolted flanged yoke, bronze seat rings and taper wedge solid disc. Also available with taper wedge double disc—Fig. 1444.



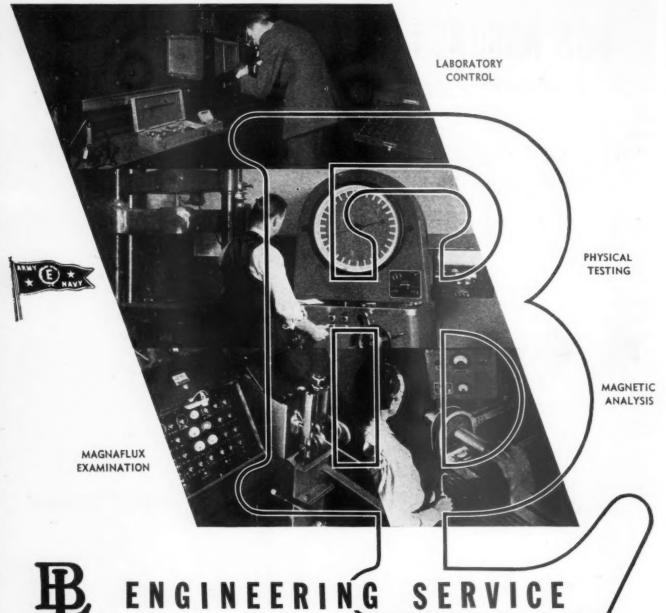
Fig. 375 — Bronze Gate Valvefor 200 pounds W.S.P. Screwed ends, inside screw rising stem, union bonnet, and renewable, wear-resisting "Powellium" nickelbronze taper wedge disc.





Fig. 241—Iron Body Bronze Mounted Globe Valve for 125 pounds W.S.P. Flanged ends, outside screw rising stem, bolted flanged yoke and regrindable, renewable bronze seat and disc.

POWELL VALVES



THE manufacture of Cold Finished Bar Steels carries with it

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Divisions of

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#### **Purchasing Cooperatives**

(Continued from page 392)

conversion tainted with fraud have been struck down."

Since the beginning of time, quarrels between competitors have marked the course of business history and in that light this fight on the farmer cooperatives is understandable. It is not the first which the farmers have faced and weathered. This one, however, in that it is swiftly developing into a clash of interests between rural and urban America, has serious implications affecting national welfare.

Thoughtful, broadminded are deeply concerned and have given the issues at stake their profound study. One of them, Mr. Victor Emanuel, chairman of the board of the Aviation Corporation, and a director in other great industries, who has made his own independent examination, sounds this warning:

"Urban business cannot afford to engage in a life and death struggle with the farm people of America. ... We have everything to lose and nothing to gain in fighting the farmer cooperatives. . . . I firmly believe that if this attack is not soon stopped, it will take years to overcome the damage it has done and further tend to segregate this great country of ours into groups that cannot but, in the end, through lack of understanding in problems of national concern, destroy it.

"By cooperating with agriculture, not only will the abuses of cooperatives and other businesses which are out of line be corrected, but business and industry will receive the sympathetic understanding of agriculture. This is vitally needed. if our peculiar American economy is to be preserved."

Salesman of the Future

(Continued from page 123)

tion, until we are in the midst of reconversion to a peacetime economy.

Short inventories will probably be the practice for some time while industry is adjusting itself to normal operations. Many indeterminates such as government policies will undoubtedly make buyers hesitant about overstocking anything. It will be a busy period for salesmen and any good-will built up now will help immensely when the reconversion period arrives.

Salesmen in the future will have (Continued on page 398)

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Producers of AMSCO CHAMOIS and MERMAID SPONGES EST. 1869 DEMAND BY BRAND

#### Salesman of the Future

(Continued from page 396)

to bear in mind that there will be a period of uncertainity which will bring about cautiousness on the part of buyers. The prospect of radically different machines at much lower cost is already in the minds of many buyers. Where old established industries are entering new fields the salesman will have an opportunity to expand his operations.

#### A Reconversion Problem

He will have to be fully informed. At the present time a wealth of information can be obtained which will help the salesman as much as his sales technique. There will undoubtedly be a "better mouse trap" complex to contend with. Much of our wartime industry is of the "war baby" type and a large portion of this industry will get into old line manufacturing after the war is over. Salesmen will find that the rash buyer of yesterday is the very conservative buyer of tomorrow when he starts operating on a competitive basis.

It would not be too much to say that many salesmen will have to "reconvert" themselves to keep in step with the rapidly changing conditions. Perhaps it will be a little difficult to understand the buver who is begging for equipment and materials now and who will hesitate to buy when they become available. During this period the salesman will profit by what he has learned about his customers in the boom years. It probably will happen that a large number of manufacturers will not know just what they do want. It will be the salesman's job to know what his customer wants and show him why.

#### Seller-Buyer Relationships

It should be clear that the idea that the good salesman is a representative of the customer on the company payroll in that in the future, and for many years of the future, he will be primarily concerned with his customers' needs. So it will be with customer needs that he will be chiefly concerned. It is worse than folly to sell a buyer something he doesn't need, for sooner or later the customer will learn this. This practice destroys confidence that the salesman can ill afford to lose. Good seller-buyer relationships cannot be purchased nor can they be sold, but they are important to the salesman in that they are of lasting value.

#### A Matter of Moolah

(Continued from page 127)

wants to know what he is going to get, and to get it regularly; he isn't interested in the uncertainty of profits. But old J. B. had always paid more than union scales, made the men work for it and like it.

Young J. B. was silent. But he was thinking. Pop had managed to get under his hide the idea that if he was going to be successful he'd better get popular. This captain-of-industry stuff used to sound pretty good, but somehow it seemed out of time and there was enough of the old man in him to make him start thinking.

Pop smoked in silence.

"Jimmy,"-it was the first time he had ever addressed Pop that way-"you have handed me a pretty severe dose. I don't know that I can swallow it all at once. Do me a favor; so far as your own affair is concerned we'll consider it settled your way. As far as my father's plan is concerned, if it is going to be laid before the board I'm the one to do it. But I want to think it out, so I will ask you to pass it up at the next meeting of the board so that I can have some talk with the rest about Then, if we don't come to some agreement, you can spring it on the board at the next meeting after. Fair enough?"

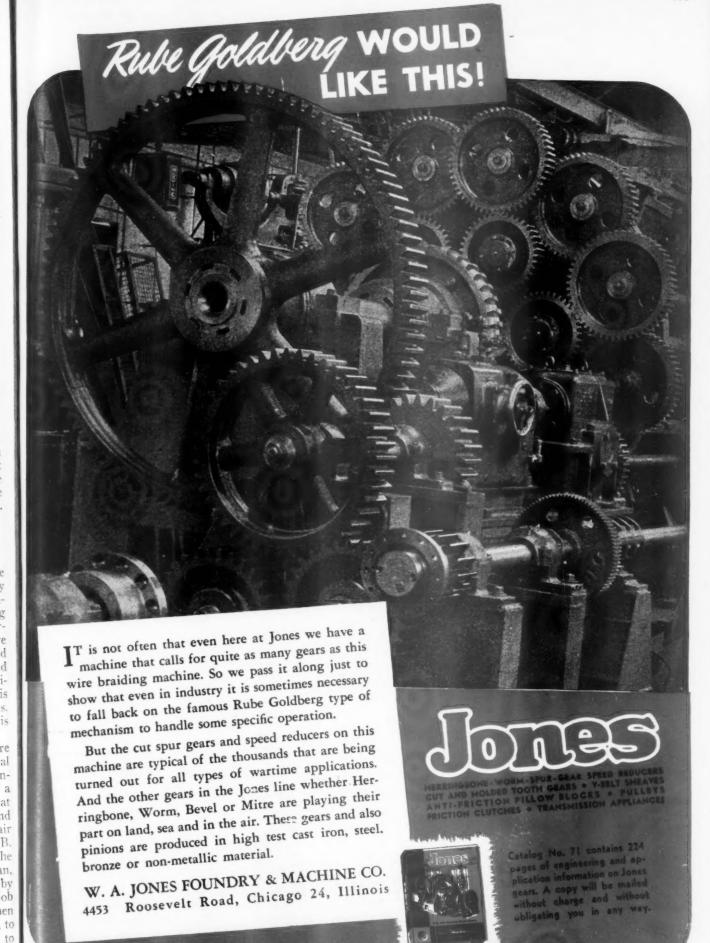
"Fair enough," answered Pop.

#### Horizons

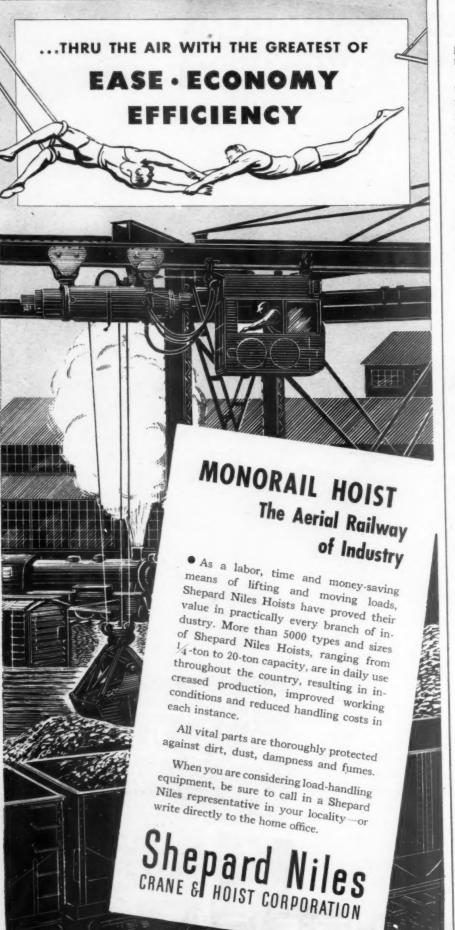
It may be argued that a mere purchasing agent couldn't possibly have enough individuality and influence to reform the policy of a big business. As far as the average purchasing agent goes, I agree. Where you find one Old Man Ackroyd and one Pop Anderson, you will find droves of the other kind. The horizon of many purchasing agents is the west wall of their office cubicles. The horizon of many employers is their bank balance.

Employers can be reformed where they need it. Their level of liberal administration can be jacked up considerably by the united thought of a few key employees who know what it is all about. First catch that kind of key employees, you say? Fair enough; employers can't all be J. B. Ackrovds. But the employee—the purchasing agent, if you will-can, by thought translated into action, by a determination to get out of his job everything there is in it, and when everything in sight is grabbed off, to reach out and find new objects to

(Continued on page 400)



Осто



462 SCHUYLER AVE. . MONTOUR FALLS, N.Y.

#### A Matter of Moolah

(Continued from page 398)

grab, accomplish much more than there actually is in the job.

Action—forward, determined action by a purchasing agent is more than likely to stimulate a corresponding action in other departments. If they have any stuff in them, they are not going to see any damned fool of a purchasing agent getting ahead of them. Not never.

And it is this sort of thing that wakes the boss out of his trance and makes him think: "By godfrey, it looks as if I were herding a bunch of hustlers; I wonder how I got them that way!"

#### Profits of Retrospection

(Continued from page 128)

human ingenuity had been reached. Any machine moving faster than ninety miles an hour was believed to be a suicidal defiance of the prime laws of physics!

Any one of the technological advancements of the 20th Century would require an encyclopedia to trace its genesis and development. Photography, radio, air-conditioning, aircraft streamlining, chemistry, medicine, plastics, electronics—each of them alone has radically changed man's life and the extended development will change his thinking.

With the progress of modern technology, inventions are no longer the accidental products of occasional geniuses; they are the expected results of scientific research and studious experimentation.

The phenomenon conveniently la-"Industrial Revolution" scarcely one hundred years old; yet this infant has developed a civilization of relative ease, comfort and plenty. Except in isolated cases and periods and for economic implications peculiar to certain peoples and places, it has given mankind, by and large, abundant food, comfortable shelter, free education, mass production, easy communication, rapid transportation and a host of facilities, labor-savers, and conveniences which, because of their almost universal availability, were unconsciously, nonchalantly and complacently accepted. As far as human contentment could go, we were contented until the Hitler-Mussolini-Hirohito trio of power-mad maniacs attempted to perpetuate them-

(Continued on page 404)

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Now that sales restrictions have been eliminated, the advantages of Chain Link Fence are once more available for the protection and beautification of all kinds of property . . . industrial, commercial, public and private. Likewise the styles and varieties of complete fences are again unrestricted.

Whether your present need is for plant uses that have been ineligible until now, or for residence, school, park, cemetery, golf club, estate or other fencing purposes, consult your Pittsburgh Chain Link Fence distributor now for recommendations, design and erection service. Or write for further information to

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is as great as ever.

Why? Because supplies must still be shipped in paper to our occupation forces and liberated countries. For the Pacific area these take double and triple wrapping to withstand long sea voyages and tropical climates.

Meanwhile, demand for domestic packaging paper comes from scores of reconverted industries. Jobs and shipments of new goods depend on paper, the essential protection of almost everything made in our factories.

That's why you should desig-

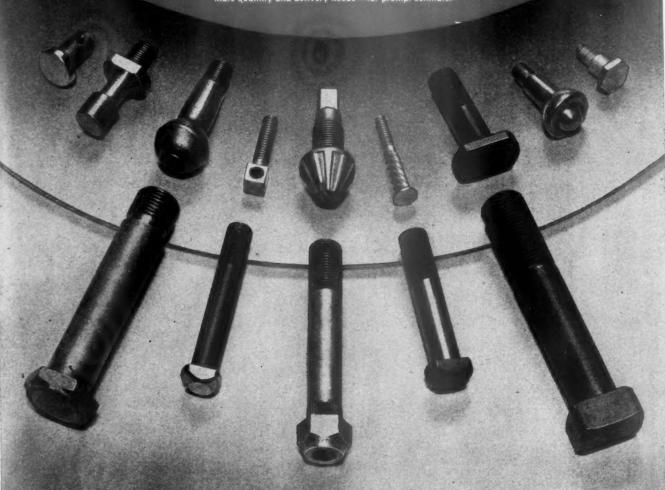
nate one place as your Salvage Corner. Collect all your waste paper there before you bundle and turn it in. If you're in doubt about how to get it picked up, call your local newspaper or Salvage Committee.

So appoint a Salvage Chief in your office. Give him the authority to organize a Salvage Team. Have him contact the local Salvage Committee and work with them.

PURCHASING

This advertisement prepared by the War Advertising Council. Space contributed by this publication. n. il\*Your own designed headed and threaded parts usually can be made by Cleveland's upset process—at a saving to you in time and money. They meet your most exacting specifications as to dimensions and threading accuracy, with extra strength as a welcome bonus. Hardened as required, in modern electric furnaces. Cold forming (or upsetting) by Cleveland's Kaufman Process is a mild forging action that shapes the steel's grain flow for strength and toughness.

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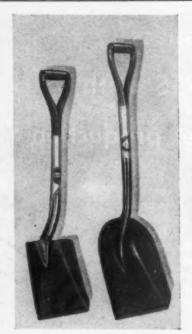


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That's what you get when you specify . . .

One reason they are such a "good buy" is that their blades are made of TEM-CROSS Steel . . . guaranteed not to split at the blade edges. You get this extra value and better service without paying a premium for it.

So whenever you order Shovels, be sure to specify "Ingersoll"-"A Borg-Warner Product."

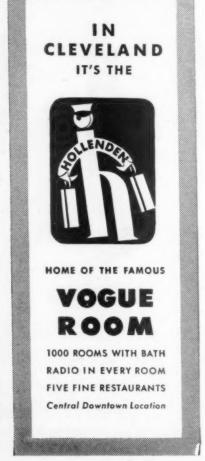
All Blade Finishes now Black except Molders' Shovels and Grain Scoops which may be furnished with Polished Face and Brushed Back.

#### INGERSOLL STEEL & DISC DIVISION

Borg-Warner Corporation NEW CASTLE, INDIANA

Plants: New Castle, Ind.; Chicago, III.; Kalamazoo, Mich.





#### Profits of Retrospection

(Continued from page 400)

selves as super-men in a tide of crimson fame! The challenge of war shattered our complacency and necesitated new miracles of production and mobilization which have staggered the human mind.

We learned, almost too late, that our inheritance of the technologies of the 19th and 20th Centuries held hazards beyond the guess of the most fertile brain. Our delight and pride in the machine was shocked by the grim realization that the bomber, the tank, the machine-gun, torpedo, rocket and flamethrower are also the unlovely and destructive concommitants of it!

The same modern technologies which have put at man's disposal the greatest potential mechanism for increasing human welfare holds a more deadly effectiveness for collective human suicide when they are utilized as instruments of war.

There we are faced with the twofold hazard of our machine age. The first is to make the enemies of an advancing civilization permanently impotent. The second is to readjust our social and economic standards to keep abreast with the new technical equipment being improved.

The first is in the hands of the makers and framers of the Peace Pact, and the means they devise to give force to their decisions. second is our own destiny. The increased leisure time made possible by our machine age, if intelligently used and apportioned to sensible thought will generate an ever-growing sense of social justice, an enthusiasm for domestic education and an expanding spirit of social and economic expediency. In our phrenetic sensations of speed we must not be swept past ourselves in a mad effort to keep pace, so that we deprive ourselves of time to think.

Progress does not demand the complete immolation of every apparently profitless endeavor. There are many things too difficult to justify in the name of progress or utility. The spires of a cathedral are not wasted because they are not used to carry an advertisement.

We shall need every mine, mill. farm and factory, big and little. working at capacity to provide full employment for sixty million persons in America. To do it will require full capacity of thinking and translation of thought into action.

An occasional glimpse into history may somewhat temper our pride, teach us the humility of the true scholar and give us a wholesome taste of mental discipline.

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THERE'S many a mechanism today doing a better job—longer—because of specialized engineering principles applied to the springs. Automatic mechanical action calls for springs with the PEP to produce continued repetitive action, and the POWER to perform the desired function. Only sound engineering can provide both for individual performance requirements.

We have seen this in mechanical developments of the past. The unparalleled demands of this war have demonstrated it to a remarkable degree. Improvements and new devices to come will benefit from just such knowledge.

Make sure you get the best mechanical action by using Barnes-made springs with Engineered Pep and Power.



WALLACE BARNES COMPANY DIVISION OF ASSOCIATED SPRING CORPORATION BRISTOL, CONNECTICUT. U. S. A.



The quality of making, backed by four generations of skilled craftsmanship, gives "U.S." rubber clothing and footwear the ability to stand the gaff even under any conditions.

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#### **Atomic Power**

Most Probable Use Will Be as Source of Heat.

THE most probable utilization of nuclear energy, the basis for the atomic bomb, is as a source of heat, according to heads of engineering and research for the General Electric Company, Schenectady, N. Y. in answer to many questions received from industry and the general public alike, asking about the potentialities of atomic power.

Concerning the possible use of nuclear energy as a source of power to heat and light homes and buildings, operate factories, propel ships, locomotives, airplanes, and automobiles, Harry A. Winne, G-E vice president in charge of engineering policy, and Dr. C. Guy Suits, vice president and director of the G-E Research Laboratory, predicted that several prospective uses of nuclear energy will become technically possible, but that it is too early to predict whether such uses will be economically practical.

In stating that the most probable utilization of nuclear energy is as a source of heat, the General Electric officials said that such heat in turn may produce steam or hot gases for use in conventional types of power generating equipment.

#### Long Road of Development Ahead

"Some people have asked concerning the possibility of direct conversion from nuclear energy to electric power in usable form. This seems to us an extremely remote possibility," said Mr. Winne and Dr. Suits. "There is a long road of development ahead. It is true that the success of the bomb demonstrated that we can release a tremendous amount of nuclear energy in one instantaneous blast, at a control time. But to make this form of energy commercially useful, we must learn how to generate it and control it in a way that is adaptable to power production. We have no doubt that we shall learn how to do this, but the learning will take a lot of research, development, and time."

Concerning the dangers to human life which result from the radiation accompanying nuclear energy, they said, "Obviously, if we should have to encase a nuclear power plant in many feet of lead or concrete, it would lose some of its attractiveness. Here also we believe we shall find a practical solution to the problem, but, again, this will take time."

Most difficult to answer is the question of the economic practicability of the commercial use of nuclear energy, the G-E officials explained. The \$2,000,000,000 cost of the atomic bomb program unquestionably could be reduced greatly if a similar project were to be started today based on the knowledge already gained through this development, but it would still be a tremendously costly undertaking, they said.

To control power stations, railroads, or other businesses in which the generation or use of power is of extreme importance, the G-E engineering and research chiefs gave the following advice: "Were we responsible for conducting the affairs of such organizations, we should go right ahead with our plans for the years to come on the basis of present-day commercially available sources of energy; namely, coal, oil, and water power. Only as research and development proceed shall we learn the limitations and possible practical commercial applications of nuclear power."

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On installations where temperatures and pressures are high, Ladish Controlled Quality Forged Steel Flanges constantly prove their added value.

Produced under exacting metallurgical control, each Ladish flange bears the Controlled Quality symbol of dependability and peak performance...the Ladish Heat Code.





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#### ARMY CONTRACTS TO BE AWARDED ON COMPETITIVE BASIS

**E**FFECTIVE immediately greater reliance will be placed upon competitive prices in the awarding of Army contracts, the War Department has announced. This is a departure from the wartime practice of letting contracts on a strictly negotiated basis. The change has been made possible because of the tremendous drop in Army procurement, the relaxation of delivery schedules and the consequent increase in competition for the business.

Where there is competition for War Department procurement, the chief of the technical service involved will advertise and solicit quotations. All requests submitted to contractors will state that while the award of a particular contract will normally be made to the lowest qualified bidder, the War Department reserves the right to award the contract as the result of negotiation and to reject any and all bids.

If the price is fair and reasonable and the bids received indicate the effect of competition, the award will be made to the low bidder and no detailed analysis of estimated cost will be needed. No further negotiation will be necessary under such conditions. However, if no real competition is reflected in the bids, if an insufficient number of contractors submit bids, or if prices bid are excessive as compared with earlier prices, an analysis will be necessary and negotiation will continue. This practice will also be followed if Army procurement requirements absorb a substantial portion of the capacity of an industry or if requirements are placed with a sole source, as in research and development contracts.

(Continued on page 410)



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## Graduation Day in a Gauge Factory

#### ONE OF THE REASONS 6 OUT OF 10 PICK U. S. GAUGES



#### "COMMENCEMENT EXERCISES" FOR A GAUGE

When all of the dozens of parts that make up a commercial U. S. Gauge have been constructed and assembled, they pass to Final Testing for a last check up. They have been in-

spected and approved over and over again during the course of completion but the final O.K. slip is the "diploma" which sends U.S. Gauges to their appointed jobs.

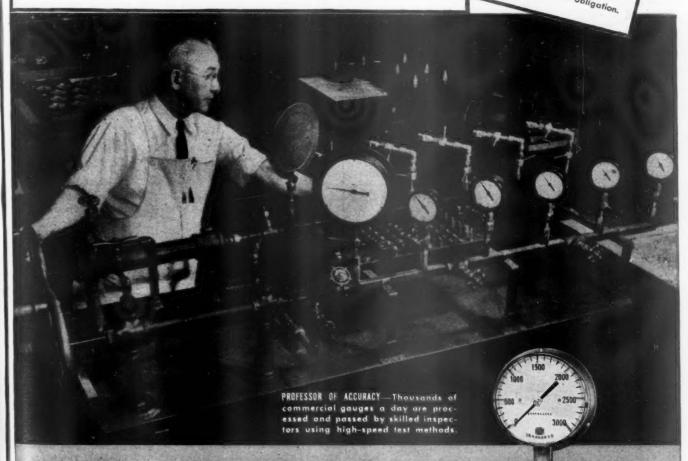
#### WHY 6 DUT OF 10 CHOOSE U. S. GAUGE

Final Testing is obviously important to you. But of more importance to you if you could only see it at work is U. S. Gauge's Manufacturing Control. Our "MC", as we call it, watches every step from raw material to final testing. It's the real reason 6 out of 10 buyers choose U. S. Gauge.



RESERVE YOUR COPY OF THE MOST COMPLETE GAUGE CATALOG EVER COMPILED!

In a matter of weeks, the 102
page U. S. Gauge catalog will
taking reservations for this largest of all catalogs. You'll want
mation on gauges, gauge movewith its easy ordering guide.
Reserve your copy on your business letterhead. No obligation.



UNITED STATES GAUGE CO.

Manufacturers of Pressure, Temperature, Flow and Electrical Measuring Instruments

U.S. INSTRUMENTS Tell The Truth

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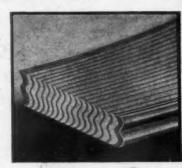
Safety against extreme temperatures and pressures.

Metal and asbestos are the only materials used in the construction of Garlock Guardian Gaskets. They are unaffected by temperatures or pressures encountered in any gasket installation.

Resistance to gases and liquids. Garlock Guardian Gaskets are protected on their inner and outer edges by a double thickness of metal which forms an impregnable barrier to the destructive action of gases and liquids.

Tight joints under changing temperature conditions.

Because of their unique structural design, Garlock Guardian Gaskets adjust themselves instantly and repeatedly to expansion and contraction due to temperature changes or vibration.



THE GARLOCK PACKING COMPANY PALMYRA, NEW YORK

In Canada: The Garlock Packing Company of Canada Ltd., Montreal, Que.



GARLOCK

(Continued from page 408)

If bid prices indicate that the contractors are deliberately pricing themselves out of government business in order to handle civilian business, the same procedure will be followed.

All contracts, except those relating to civil projects under the Chief of Engineers, will be awarded under the First War Powers Act and Executive Order No. 9001, and the Act of 2 July 1940, as continued in effect by the Act of 5 June 1942.

#### MAJOR PART OF EMERGENCY ALTERNATE FEDERAL SPECIFICATIONS CANCELLED

C ANCELLATION of 400 out of a total of 492 emergency alternate Federal specifications, devised to provide substitutes for critical materials used in items purchased by the Government during the war, was announced by the War Production Board.

WPB said that these emergency specifications had been developed at the suggestion of the Conservation and Salvage Division, working in collaboration with the 73 regularly constituted technical committees on Federal specifications. The substitution effected resulted in a substantial saving in critical materials needed in war production and thereby materially contributed to the maintenance of such production.

Eighty-five additional emergency specifications are in process of cancellation or will be incorporated into basic Federal specifications where they have been found to be superior to the former product, WPB said. The remaining seven will be retained until tin, burlap, rubber and other materials become more plentiful.



THE TANGLEFOOT CO., 401 Straight St., Grand Rapids 4, Mich.

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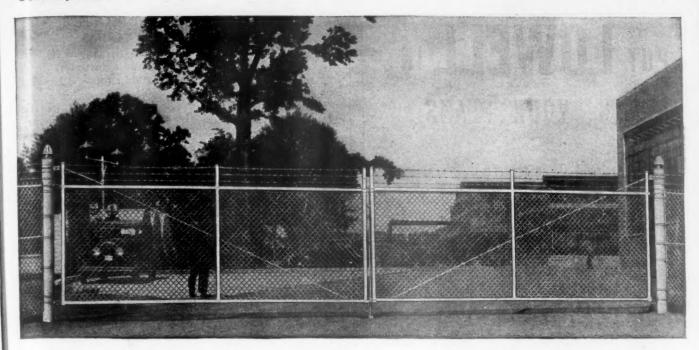
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### Plans Include Fence?

## Send for this helpful book on Anchor Protective Fences

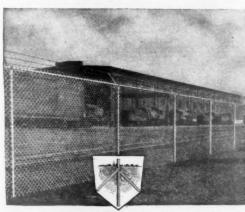
"ANCHOR PROTECTIVE FENCES" is both a catalog and a specification manual. It shows many types and industrial uses of Anchor Chain Link Fence . . . pictures installations for many prominent companies . . . contains structural diagrams and specification tables.

In addition, it illustrates and describes important and exclusive features of Anchor Fence construction: Deep Driven Anchors, which hold the fence permanently erect and in line; Square Frame Gates, amazingly free from sagging and warping; Square Terminal Posts and U-Bar Line Posts, which increase strength and durability.

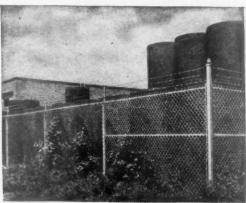
Write for Book No. 110, or let us have one of our experienced engineers call and give you the benefit of his knowledge in solving protection problems. Address: Anchor Post Fence Co., 6615 Eastern Avenue, Baltimore 24, Maryland.

Anchor Fence
Nation-wide Sales and Erecting Service

Anchor Gates, of 2" square steel tubing, buttwelded at corners, provide beauty and strength with amazing freedom from sagging and warping-"Clamp-On" hinges permit 180° gate swing.



Exclusive with Anchor, deep driven "Anchors" clamped to the posts form a 3-point anchorage deep in the sub-soil; hold posts permanently erect and in line in any soil or climate.



Square Corner Posts, also exclusive with Anchor, improve appearance and are stronger than round posts of comparable size. Cross-bracing to adjoining line posts adds extra rigidity.

, Mich.

## PUT LOWELL IN YOUR PLANS

There are all sizes of Reversible Ratchet Wrenches in the Lowell family, even as small as 6 inch in length. If you have problems, or haven't one of our catalogues, write today to the concern that has made a study of and built up this type of wrench.

#### **LOWELLS FOR TOMORROW**

Pipe Coupling Steel Construction Timber Bolting Culvert Connecting Staybolt Caps Cable Clamps Grease Plugs Countersunk Plugs Tunnel Liner Plates Tank Bands R. R. Truck Bolting Water Gates, Etc.

THE OLD RELIABLE WRENCH

LOWELL WRENCH CO., WORCESTER, MASS.

#### PROMPT FILING OF CLAIMS

T HE main problem in contract settlement at present is to make sure that contractors with terminations file their claims promptly, Robert H. Hinckley, Director of Contract Settlement, declares.

Emphasizing that the Government cannot settle claims until they are filed by contractors, Mr. Hinckley urged all contractors who received termination notices to get their claims in promptly.

"Delay in filing claims may seriously impede the entire contract settlement program," he said. "Settlements in July have been slowed by failure of contractors to take prompt action on V-E-day terminations.

"To avoid having industry's funds tied up during the critical reconversion period, provision for interim financing was made by regulations issued by this office. The latest surveys disclose that ample funds are available to finance contractors with terminations either through partial payments or guaranteed T-loans. This is contrary to the statement issued by the National Association of Manufacturers that "the operating funds of industry may be tied up for six months." Under existing provisions there is no reason why contractors in most cases cannot get liberal partial payments or guaranteed T-loans within 30 days after application.

"It is too early for the effects of the terminations following the victory over Japan to be reflected in settlements, but we cannot afford delay. It is important, therefore, that contractors not yet thoroughly familiar with contract settlement procedures and the methods of filing acceptable claims immediately communicate with their Government contracting agency or the Termination Coordination Committee in their region."





that Truarc Retaining Rings hold moving parts together better!

"The simplicity of the Waldes

Retaining Ring assembly enabled

Retaining Ring assembly enabled

us to conceive a design for our

us to conceive a design for our

spindle that assured us of all

the physical qualities required

the physical qualities required

in a high-speed machine of

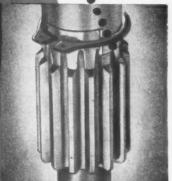
this type."

(Signed)

AMERICAN SEPARATOR CO., Inc.



The American Separator Company found no solution to the problem of excessive noise and vibration set up by the spur gear train action of this separator bowl revolving at 8500.



#### AFTER TRUARC

Truarc Retaining Rings eliminated vibration and noise while actually simplifying the assembly, achieving a rigid bearing of greater strength with no loss of speed!

External Type
National Aircraft
Standard 51

Internal Type
National Aircraft
Standard 50

If your problem is holding together or positioning moving parts, you should know Truarc Retaining Rings. They offer important advantages over nuts, shoulders, collars and pins. They save space. They make assembly and disassembly easier, simpler, quicker. They keep their bulldog grip, hold their true circularity indefinitely under severe working conditions. Test Waldes Truarc in your products, in the machines that make them. Write for samples and complete data. Dept. W-10.

WALDES TRUARC



RETAINING RING

WALDES KOHINOOR, INC., LONG ISLAND CITY 1, NEW YORK CANADIAN REPRESENTATIVES: PRENCO PROGRESS CORP., LTD., 72-74 STAFFORD STREET, TORONTO

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#### WANTED!

THE NAMES OF FIRMS NEEDING PRODUCTS PROCESSED FROM CANVAS OR DUCK

If your company needs—or will need—anything made from canvas, let us know NOW. The supply allotted to us for civilian requirements, after we are finished with present government contracts, may not be sufficient to supply "everything in canvas" that we normally produce. We shall have to concentrate on those items for which there IS THE GREATEST DEMAND.

#### THE REWARD

Those purchasing agents who list with us now their canvas items most needed will be the ones to receive FIRST consideration when we are able to accept and make up orders.

FOSTER MANUFACTURING CO.

430 NOTRE DAME ST., NEW ORLEANS-6-LA.

#### RESTRICTIONS REMOVED ON SPECIAL SALES OF MOST SURPLUS MATERIALS

A S another step in promoting complete and rapid reconversion, the War Production Board has officially removed the restrictions on special sales of most but not all idle, excess and surplus materials.

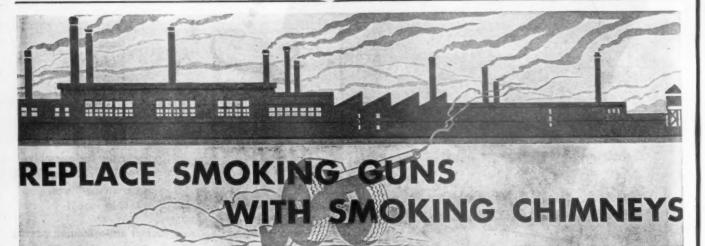
This action thus frees a pool of certain materials that were in short supply until V-J Day, but which now are surplus.

Special sales are sales by persons who acquired or made the materials for use and not for sale or resale. In addition, all sales of surpluses by Government agencies are special sales.

Through a drastic revision of priorities Regulation 13, nearly all materials in contract termination inventories and Government surplus may now be sold freely and may be used for any permitted civilian production. However, special sales of certain scarce material are still restricted in the regulation. Moreover, buyers may not use materials acquired under Priorities Regulation 13 in violation of any of the remaining orders of WPB limiting or prohibiting the use of any particular material, or limiting the amount they may receive, or the amount of any product they may make.

The remaining materials subject to domestic special sales restrictions are: antimony, pig tin, uranium, rope and cordage fibers (manila and agave only), textile materials obtained under Order M-328B and orders in the M-388 series, rubber (natural, latex and natural chlorinated), mining equipment and machinery in the hands of mining producers, and domestic mechanical refrigerators.

(Continued on page 418)



Let's all pull together and try to provide a good job for every returning soldier. The sound way to do this is to sell goods—lots of goods. And, in the highly competitive era we are entering, the way to sell goods is to sell GOOD goods.

For many years, Newton has helped manufacturers to make good goods better, by supplying high grade screw machine products at reasonable prices. War work has in no way altered this practice. To prove it, all we ask is to plan with you in the production of your postwar line. Any metal or alloy. Special experience in aluminum.

NEWTON SCREW MACHINE PRODUCTS
THE NEWTON MANUFACTURING CO., PLAINVILLE, CONN.

## AIRCRAFT PLANT REDUCES GLARE WITH BLUE RIDGE Frosted AKLO



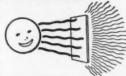
Because events required that our Air Force be spread over tremendous areas, inaccuracies and lack of precision couldn't be tolerated in plane production. As in hundreds of other types of plants, the aircraft factory pictured above turned to Blue Ridge Frosted AKLO to reduce glare and assure better production in both plant and office.

Frosted AKLO is a blue-green glass that has many advantages. This cool-appearing glass cuts sun glare to a point where processing errors are reduced and production increased. It helps retard the entrance of much of the sun's heat, thus decreasing the load on air conditioning apparatus. It spreads daylight evenly...makes employes more comfortable...helps conserve human energy by reducing eyestrain.

Frosted AKLO is made by the Blue Ridge Glass Corporation of Kingsport, Tenn., and sold by Libbey Owens Ford through leading glass distributors. If your plant or employes are faced with a sun glare or excessive sun heat problem, ask your L·O·F Distributor for a Radiometer demonstration of Frosted AKLO. For information, write Blue Ridge Sales Division, Libbey Owens Ford Glass Company, 88105 Nicholas Building, Toledo 3, Ohio.

GET THESE THREE

Frosted AKLO



REDUCES GLARE — Eliminates eyestrain



RETARDS SUN HEAT—Keeps workers comfortable on their jobs.





RENDERS SAVINGS—Eliminates shades or painting of glass.



#### BLUE RIDGE AKLO GLASS

Heat-Absorbing · Glare-Reducing · Figured and Wire Glass



Осто

#### LUDLOW SAYLOR

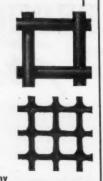
Precision Wire Cloths and Screens for all industrial purposes.

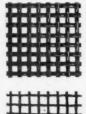
We have been specialists for many years in the making of precision wire cloths, wire screens and woven wire products.

We apply our same precision principles in fabricating wire cloths into finished industrial units, for production or processing equipments or for permanent parts of countless industrial products.

We invite your inquiries for wire cloths of all commercial metals or alloys or weaves, in continuous lengths or cut to size, or processed meet your individual require-

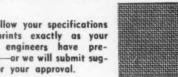
We will follow your specifications and blue-prints exactly as your production engineers have pared them-or we will submit suggestions for your approval.







shapes



"Perfect" "Perfect" "Perfect" "Perfect" Wire Cloth Wire Cloth alloys and Wire Cloth metals processing products weaves Super-Loy Arch-Crimp Bending Baskets Steel Coiled Binding Circles Double-Crimp Brazing Galvanized Cones Double-Fill Tinned Calendering Crates Stainless Dutch Clinching Cylinders Filter Steels Discs Cutting Nickel-Chromium Flat-Top Dipping Forms Dishing alloys Herringbone-Leaves Twill Lengths Aluminum Flanging Intermediate-Flattening **Panels** High Crimp Forming **Pieces** Rek-Tang Framing Racks Bronze Ribbons Selvage-Edge Galvanizing Commercial Rolls Straight-Warp **Painting** Phosphor Sections Copper Stranded Shearing Segments Monel Metal Sta-Tru Slitting Spacers Nickel Triple-Warp Trimming Any special al-Twilled Arc-Welding Template loys available Twisted-Fill Gas-Welding in rod or wire Twisted-Warp Spot-Welding

The LUDLOW-SAYLOR WIRE COMPANY Newstead Avenue & Wabash Railroad ST. LOUIS 10, MO.

Wire Cloth Baskets, Trays, Handling Fixtures, made to individual requirements, all metals, weaves, styles, shapes,

The remaining materials subject to export special sales restrictions are: antimony, babbitt, solder, tin, uranium, animal bristles and hair, burlap and elastic fabrics, manila, agave, jute and coir fibers, hides, skins, furs and leather and products made primarily from them. Also included are textile materials acquired under M-328B, M-317 and orders, in the M-388 series, rope (manila and agave only), vegetable tanning material, synthetic rubber thread and yarn, rubber (natural, natural latex, reclaimed and synthetic), mining equipment and machinery, and domestic mechanical refrigerators.

WPB cautioned, however, that the disposal of contractor termination inventories and Government surpluses are still subject to regulations of the Surplus

Property Board.

PRICE CONTROL NOT SUSPENDED ON PRIMARY FOREST PRODUCTS

PRICE control has not been suspended on any "lumber and primary forest products," the Office of Price Administration advises.

In Supplementary Order No. 129—Exemption and Suspension from Price Control of Machines, Parts, Industrial Materials and Services-which became effective August 31, 1945, a title crossline inadvertently appeared in the suspension section of the order reading "Lumber and Primary Forest Products."

The appearance of this line has led to trade reports

(Continued on page 418)



LIS NEW BULLETIN . .

gives you the latest information, recommendations, diagrams, listings, prices, etc., on the broad line of Gits Oilseals and Greaseals, which are widely used in today's mechanized warfare. They provide positive bearing protection under all conditions. Your FREE copy is ready for mailing-write for it.

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# QUAKER QUAKER ON OTHER LIME CHLORINATED LIME

The exacting requirements of the Armed Forces have resulted in a new Chlorinated Lime. The Pennsylvania Salt Manufacturing Company now offers Quaker IMPROVED Chlorinated Lime which meets all the requirements of Chemical Warfare Service specification No. 197-54-281B, Grade 2. It comes in 700, 300 and 100 lb. drums. There is a limited quantity for civilian use. Prices available on request.

MOISTURE, NOT MORE THAN 5%

PENNSYLVANIA SALT MANUFACTURING COMPANY hemicala

1000 WIDENER BUILDING, PHILADELPHIA 7, PA

NEW YORK + CHICAGO + ST. LOUIS + PITTSBURGH + CINCINNATI + MINNEAPOLIS + WYANDOTTE + TACOMA

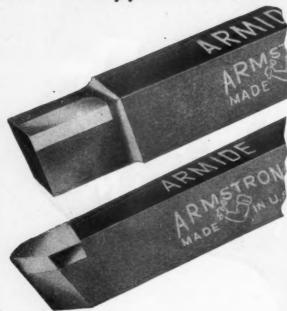
Penn Salt Manufactures

LIQUID CHLORINE
for water sanitation
and sewage treatment

Anhydrous Ammonia • Filter
Alum • Ferric Chloride •
Sodium Aluminate • Chloride
of Lime • Caustic Soda and
other products

OCTO

## Carbide Tipped Cutters



ARMIDE is a sintered-carbide cutting material which approaches the diamond in hardness. ARMIDE will machine the hardest and toughest steels and sand-filled castings with ease, as well as such heretofore "unmachineable" substances as hard rubber, plastics, and even glass. Because of the extreme hardness of ARMIDE, cutter bits tipped with this material will hold their cutting edge much longer than the finest tool steels and will machine from 10 to 100 times as many pieces between grindings.

ARMIDE-tipped CUTTERS offer special advantages on machining operations involving: (1) Long runs, (2) Sand-filled castings, (3) Tough alloy steels, (4) Machining of hardened parts without annealing and subsequent re-hardening, as in maintenance work, (5) High Speed Machining, (6) Machining of unusual materials.

ARMIDE Carbide Tipped Cutters are designed for use in ARMSTRONG Carbide TOOL HOLDERS. They come in two grades ARMIDE (Red) for machining steel, and ARMIDE (Grey) for machining cast iron, brass, bronze, aluminum and non-metallics. These grades of ARMIDE are distinguished by the corresponding color of the cutter-bit shank.

Both ARMIDE (Red) and ARMIDE (Grey) Cutter-Bits come ready-ground in four standard cutter shapes (illustrated below) namely: Right-Hand Turning, Left-Hand Turning, Square Nose Finishing 80° and Round point "V". Both ARMIDE (Red) and ARMIDE (Grey) cutter-bits come with either "Square" or "Heavy Duty" shanks. The shanks of "Square" cutters

Square LH, R.H. 80°

have a square cross section. The shanks of "Heavy Duty" cutters are deeper than they are wide in cross section, the added depth compensating for that part of the shank cut away to receive the ARMIDE tip.

#### ARMSTRONG BROS. TOOL CO.

The Tool Holder People" 303 N. Francisco Ave., Chicago, U.S.A. Eastern Warehouse & Sales: 199 Lafayette St., New York (Continued from page 416)

that price control had been suspended on "lumber and primary forest products."

OPA said an amendment to the order would be issued shortly, eliminating the line "Lumber and Primary Forest Products" from the order.

OPA explained that no lumber or primary forest product items were listed under the crossline reading "Lumber and Primary Forest Products," and, therefore, price control has not been suspended on any such items.

#### WPB ISSUES NEW INVENTORY CONTROL REGULATION NO. 32

1 1 1

AS a part of its policy to retain all controls necessary to assist orderly and equitable reconversion, the War Production Board has issued a new inventory control regulation embodying all previous WPB inventory restrictions and designed to protect all business against hoarding, buyers' scrambles, and accumulation of excessive inventories of materials and components.

The regulation will afford equal protection for little and big business during the reconversion period through restrictions on all ordering, deliveries, receipts and processing materials in short supply.

WPB officials said in issuing the new Priorities Regulation 32 that it is in keeping with the board's plan to retain a small but very important segment of its total controls.

All kinds of materials are covered, including raw or semi-fabricated materials, commodities, equipment, accessories, parts, assemblies or products of any kind, whether or not acquired with priorities assistance, excepted from the new provisions, however, is a list of materials in ample supply.

Thus, the new regulation incorporates the inventory rules formerly contained in Priorities Regulation 1 and the Controlled Material Plan Regulation 2, and lists the remaining orders of WPB containing inventory restriction on particular materials or classes of persons. It also designates the various divisions administering the particular controls.

Furthermore, restrictions on industry's ordering more than needed, which formerly applied generally only to rated orders, now apply on all ordering except for the materials in ample supply, which are listed on Table 3 in the new regulation and which are also exempt from all inventory restrictions on what persons may receive under WPB orders.

WPB said this list will be expanded as more mate-

WPB said this list will be expanded as more materials and components are determined to be in ample supply. In this revision, the following materials have just been added to Table 3 (the old Order M-161), thus freeing them from inventory restrictions:

Aluminum, cork, istle fiber and products, jute fiber and products (except burlap), sand, gravel, crushed stone, slag, pipe fittings (steel and brass), and valves (steel and iron).

In announcing the new Priorities Regulation 32, WPB officials pointed out that in his recent Executive Order President Truman required that WPB take all necessary steps to prevent hoarding and accumulation materials not in ample supply.

Moreover, J. A. Krug, Chairman of WPB, informed industry on August 14, that inventory restrictions would be continued. At that time, Mr. Krug asked

(Continued on page 420)

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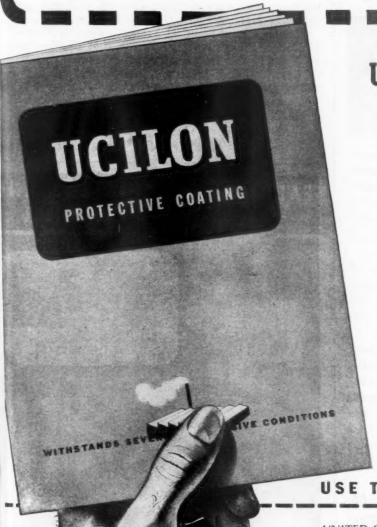
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### HOW TO SAVE

TIME AND MATERIALS
IN PROTECTING SURFACES

### AGAINST CORROSION



UCILON is a new plastic base material—applied like paint—that is more resistant to more corrosive elements than any coating you've ever tried.

It resists all acids in commonly used concentrations. It resists all alkalies and salts at ordinary temperatures—as well as petroleum derivatives and natural oils. In addition, it is non-toxic, non-conductive, inhibitive to fungus.

Tests prove that even against the most destructive elements, Ucilon does a superb job of protecting surfaces. For equipment, walls, beams, duct work, tanks – wherever extra protection, extra service, extra sales appeal is desired—you can specify Ucilon. It produces an attractive glossy finish—white, black or in colors.

Our free booklet gives details to help in the solution of your corrosion problems. It's yours for the asking.

UNITED CHROMIUM, INCORPORATED

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#### USE THE COUPON FOR YOUR COPY

UNITED CHROMIUM, INC.

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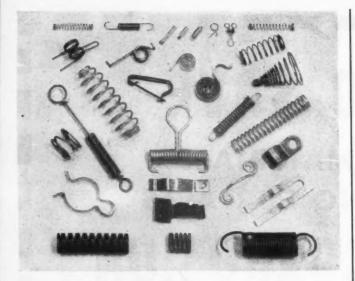
Send 12 page illustrated Ucilon Booklet-without cost or obligation.

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## Your Product is Better When Your Springs are Reliable



The efficiency of your product—if it requires springs—is highly dependent on the quality of those springs. With little or no difference in cost, the service life and performance of your equipment can be radically improved by proper attention to the design, material, and

workmanship on your springs.

Reliable is thoroughly experienced on all varieties of springs, wire forms and light stampings, with special emphasis on precision work requiring close tolerances. Our facilities and personnel are exceptional, because our kind of customers very often demand exceptional results.

On all-out war production, Reliable has really done things with springs—attained results which we will certainly turn to good account on your civilian needs. Remember that for experimental springs or small lots, our small order department is at your service. If your problems are a little off the beaten track, give us a call. We are equipped for FAST SERVICE, and have materials on hand, for almost any order.

Ask for Reliable Catalog 44, containing useful data on spring design.

THE RELIABLE SPRING & WIRE FORMS CO.
3167 Fulton Rd. Cleveland 9, Ohio

Representatives in Principal Cities



(Continued from page 418)

his field force to see that there is compliance with these restrictions.

The agency said that it believed industry will recognize the necessity for rigid inventory control during this difficult reconversion period in the interest of orderly and rapid expansion of civilian production.

Just as rapidly as possible, materials in ample supply will be exempted from all restrictions on ordering, deliveries and receipts through frequent amendments to Table 3 of Priorities Regulation 32.

Officials pointed out that WPB felt free to revoke many of its production and distribution restrictions because of the continuance of the inventory controls and that these inventory controls will be continued until materials are generally in ample supply.

#### "WAR TIME" NO LONGER JUSTIFIED SAVED MILLION TONS OF COAL ANNUALLY

J. A. KRUG, Chairman of the War Production Board, recently announced that with the end of the war continuance of "War Time" is no longer justified as a fuel- and power-saving measure.

Mr. Krug sent identical letters to Senator Kenneth McKellar, President of the Senate, and Speaker Sam Rayburn of the House, in which he stated that with the capitulation of Japan and the resultant cutbacks in war production "fuel savings from continuance of War Time are no longer sufficiently related to the functions of the War Production Board as to justify recommending retention of War Time for that reason."

(Continued on page 422)



I'M STRONG! I'M TOUGH! I'M AGILE!



Tireless TIGER BRAND helps you handle more material per day!



Excellay Preformed

DAILY tonnage depends upon keeping equipment actively on the job. Time out for repairs, replacements or adjustments cuts down productiveness-cantankerous lines also lower efficiency of materials handling machines. That's why contractors and operators prefer TIGER BRAND Wire Rope.

U·S·S American TIGER BRAND Excellay Preformed Wire Rope has Stamina to stand up under the hardest usage encountered in grueling work of this kind. Strength, Toughness and Flexibility are reflected in the longer, trouble-free service it gives.

TIGER BRAND's high resistance to bending fatigue, its ease of handling and non-kinking, non-rotating characteristics are built-in advantages that will make your wire-roperigged Equipment more efficient.

Prepare now for the busy days ahead. Check over your equipment. Plan to re-rig with TIGER BRAND—and be sure to specify TIGER BRAND Wire Rope when buying new equipment.

EVERY SUNDAY EVENING, United States Steel presents The Theatre Guild on the Air. American Broadcasting Company coast-to-coast network. Consult your newspaper for time and station.

AMERICAN STEEL & WIRE COMPANY Cleveland · Chicago · New York

COLUMBIA STEEL COMPANY, San Francisco

United States Steel Export Company, New York

UNITED STATES

ERAN



Wire

All this...
and Safety, too
with
JUSTRITE

Justrite Safety Lanterns are available now in limited quantities. Check your requirements for these safety approved portable lights and utility cans that cut the hazards of fire and explosion to a minimum and see your supply distributor for the earliest possible delivery.

#### Justrite Twin-Bulb Safety Lanterns and Flashlight



Model No. 46-S

#### Inspector's Lantern

Designed for service with safety. Ideal for inspection and yard work. Polished 7inch detachable reflector can be quickly removed from the twin-bulb reflector.



Handy-Safety Flashlight

1500 candlepower from 3 standard cells. A mighty midget flashlight that fits the palm of the hand. A sturdy plastic case "seals-in" all the famous Justite Safety Features.



All-Purpose Safety Flashlight

Double approved for safety. Fixed guard protects the face of the lantern. A movable guard base and adjustable handle allows the powerful beam to be adjusted at any angle.

Approved for Safety . . . Justrite The above lanterns and flashlight are listed for safety by Underwriters' Laboratories, Inc., (Class 1, Group D locations), by U. S. Bureau of Mines for safety in methane gas and air mixtures and by the Bureau of Marine Inspection for safe use in pump rooms of tankers.



#### Justrite Safety Cans and Oily Waste Cans

Approved for safety and so marked by the Associated Factory Mutual Fire Insurance Companies and Underwriters' Laboratories.



Olly Waste Can The approved container for dangerous, oily waste. May be had with or without foot lever opener. No springs. Top closes automatically. Safety Gasoline Can For safety in handling and storing flammable liquids. Easy to fill, pour and carry. No splashing, spilling, or evaporation. Sizes from 1 pt. to 5 gallons.

Ask your Supply Distributor for complete specifications.

JUSTRITE MANUFACTURING COMPANY
2063 N. Southport Ave., Dept. B-2, Chicago 14, III.



(Continued from page 420)

Mr. Krug's letters revised an earlier position taken subsequent to V-E Day in which he informed Congress that continuance of War Time was no longer necessary for the purpose of economizing use of electric power capacity but was still highly desirable as a fuel conservation measure for the remainder of the 1945-1946 fuel year.

National War Time is provided for by Public Law 403, 77th Congress, 2nd Session, which was approved January 20, 1942. On a national basis, War Time has made possible a decrease of 1,500,000 kilowatt hours in the power load of electric utilities, enough capacity to supply the greater part of the war-time aluminum program; to have built additional capacity during the war to provide for this load would have required as much steel as is needed for 140 destroyers, as much copper as required for 2,500,000,000 rounds of rifle and machine-gun ammunition, WPB said. Additionally, the net decrease in use of electricity as a result of War Time has saved nearly 1,000,000 tons of coal annually, the equivalent of 5,000 train loads of coal.

#### INDUSTRIAL FUEL NEEDS REDUCED BUT LITTLE BY JAPAN'S DEFEAT

DETAILED estimates of bituminous coal requirements show that the fuel needs of industrial groups were reduced very little by Japan's defeat and that the nation's total coal needs will be so great that it will be difficult if not impossible to meet them with

(Continueed on page 424)



shop favorites because of their easy operation . . . position of handle and thumb lever permits forcing oil from any position with least effort. They deliver a full stream or one drop under perfect control. Unusually durable. If repairs are necessary, all pump parts are renewable — no soldered connections.

pump parts are renewable — no soldered connections. Upright, angle or flexible spouts. 34, 1, and 2 pint capacities.

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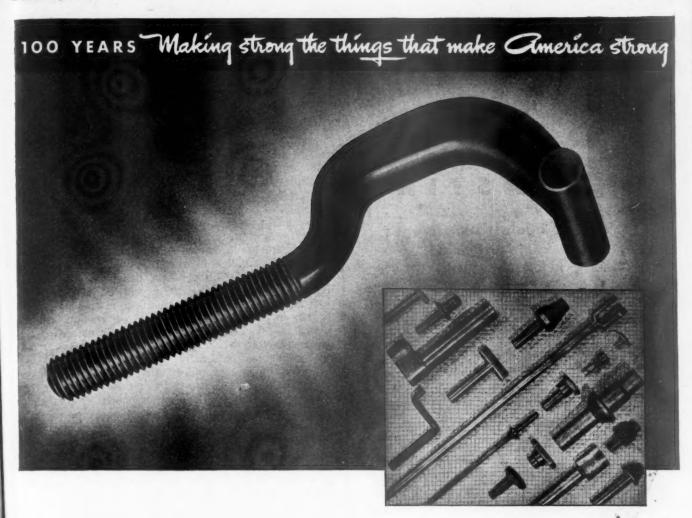
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#### COLD-FORGED ... on bolt-making machinery ...

for strength, accuracy, appearance and economy

The same method that is used so successfully to manufacture RB&W EM-PIRE Bolts was used to produce these special parts...with maximum strength, accuracy and appearance, and at lowest cost.

Cold-forging on RB&W equipment increases tensile strength, intensifying the grain while preserving the flow lines of the metal... and provides an automatic inspection of the material. Headed parts are formed with extreme accuracy, for this modern machinery is operated to very close tolerances. Threads are perfect. Appearance is unmistakably that of a quality product.

Costs are lower, because RB&W's equipment operates at very high speeds, and, in cold-forging, the scrap waste is virtually eliminated.

#### THE LONGEST EXPERIENCE IN AUTOMATIC COLD-FORGING

This is RB&W's 100th year. The history of this company is also the history of automatic cold-forging, for it introduced the original automatic cold-heading machine and has since pioneered in many respects to improve the quality and lower the costs of fasteners and other parts which can be cold-forged.

In planning new parts, consider the

many metal shapes which can be produced by cold-forging and also that RB&W's experience and facilities make it your logical source of supply. At present, wartime commitments have monopolized those facilities; meanwhile, keep in mind the advantages of this method.

#### RBEW

Russell, Burdsall & Ward Bolt and Nut Company. Factories at: Port Chester, N. Y., Coraopolis, Ph., Rock Falls, III. Sales offices at: Philadelphia, Detroita, Chicago, Chattanooga, Los Angeles, Portland, Seattle ... with the industry's most complete, easiest-to-use catalog.

ITTITATE TO TO TO TO THE AND NOT COMPANY

RUSSELL, BURDSALL & WARD BOLT AND NUT COMPANY

(Continued from page 422)

available mine manpower, Solid Fuels Administrator Harold L. Ickes announced.

He said that the detailed figures support preliminary estimates announced several days ago, which place the amount of soft coal that would have to be mined to meet all needs in full at between 570,000,000 and 585,000,000 tons for the present fuel year, which ends next March 31.

As yet, Administrator Ickes explained, there is no indication that the coal mining industry will obtain enough additional men to enable it to push bituminous output beyond the 575,000,000 tons estimated to be possible if peak production can be maintained with present labor forces.

At the present time, shortages of the domestic sizes of the high grade eastern soft coals, which are widely used for home heating, make it necessary that they remain under the 80 per cent delivery quotas established several months ago. However, SEA is considering the amendment of regulations so as to enable retail dealers to deliver an additional 20 per cent in "run-ofmine" or "slack and nut-slack" sizes produced in certain fields wherever additional quantities of such coals can be obtained by dealers.

"It is unfortunate, indeed, that misinterpretation of Gen. Brehon B. Somervell's recent statement has caused the public to believe, erroneously, that there will be plenty of coal of all kinds because of the cancellation of army contracts," Administrator Ickes said. "As a result, certain industries are failing to purchase the lower grades of coals, and we shall not be able to replace the production thus lost. I want to free such consumers of their false optimism before irreparable harm is done to the coal supply.

#### MILITARY PRODUCTION ESTIMATED AT \$2,000,000,000 TILL FIRST OF YEAR

W AR production that was still scheduled through the first half of 1946 after the Victory over Japan totaled \$10,000,000,000, the War Production Board reports. This was about one-third of the one-front war schedules in force at the beginning of August.

In its report to industry on the military production job remaining to be done, WPB estimated that total contracts would not drop below \$2,000,000,000 until the first quarter of next year, when present contracts call for \$1,900,000,000 worth of material for the armed services. This represents about one-eighth of the production rate achieved last March when the war still was being fought on two fronts.

While ordnance items—guns, ammunition, combat vehicles and communications equipment—fall by the second quarter of 1946 to a rate that is only 11 per cent of July's, other munitions groups still call for considerable output. Shipbuilding, for example, will still be at almost one-third of the July rate.

September production was scheduled at \$1,600,000,000, or one-half of the August figure. The steepest decline in production was scheduled to take place in the 30 to 45 days following the end of the war with Japan. The cut for the next nine months takes effect more gradually, with a drop by the middle of 1946 of only \$1,000,000,000 from the September figure.

Where total war production for 1945 as scheduled in March was \$60,700,000,000, actual output for the year

(Continued on page 426)



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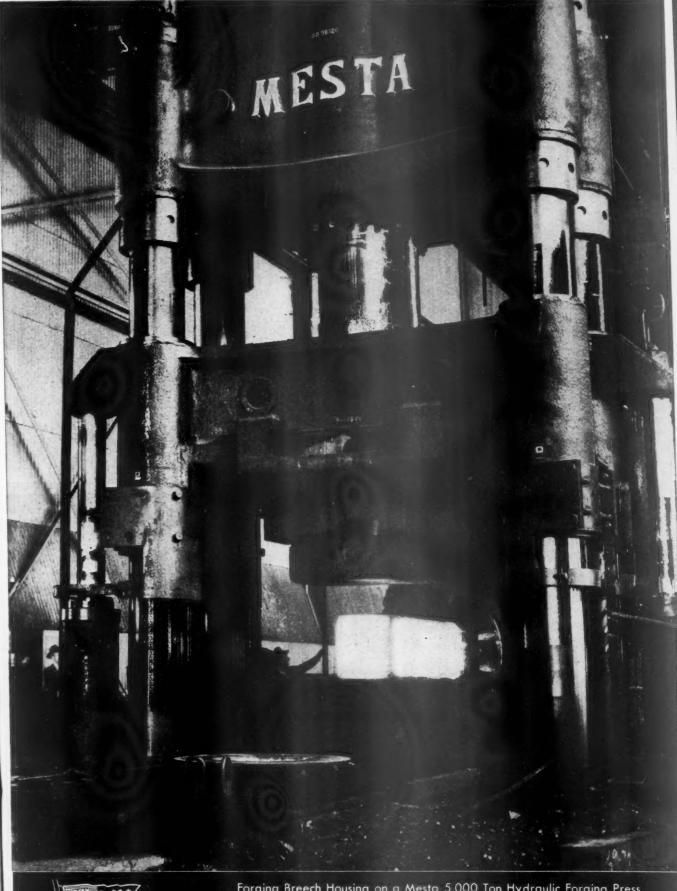
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#### MANUFACTURERS SCREW PRODUCTS

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as now scheduled will be about \$39,200,000,000, WPB figures show.

Excluding food and construction, military procurement contracts placed during the entire five-year period from July 1940 through August 15, 1945, totaled \$262,-000,000,000 WPB said. Of these, about \$60,000,000,-000 represent cancellations to date, including cutbacks made after Japan's capitulation.

The uncanceled portion includes \$192,000,000,000 worth of weapons and supplies delivered through August 15 and \$10,000,000,000 still scheduled to be delivered. Subcontracts are not included in any of the figures.

#### UNRATIONED TIRES BEFORE YEAR END

Synthetic Rubber May Average 30c a Pound

A MERICAN motorists should be able to buy tires on an unrationed basis before the year end in spite of the problems incident to switching the rubber industry from wartime production to high level civilian tire manufacture, according to John L. Collyer, president of The B. F. Goodrich Company and former special director of the nation's rubber programs. He added that it might be the end of 1946, however, before motorists would be able to get a chosen brand of tire at the exact time they might want it.

"The tire industry now has the immediate assignment of putting good tires on the wheels of America's 30,000,000 passenger cars, trucks and buses, and of keeping pace with the automotive industry as it begins production of millions of civilian vehicles. Without the ex-

(Continued on page 428)



Here, in the Bendix-Weiss Constant Velocity Universal Joint, Strom Balls do their part in making military vehicles, from Jeeps to 14-ton Armored Cars, the efficient fighting equipment that they are. This is only one spot in our great war production effort where the high degree of perfection of Strom Balls serves industry, enabling it to provide the finest bearing equipment towards its great contribution to total victory. Strom Steel Ball Company, 1850 South 54th Avenue, Cicero 50, Ill.

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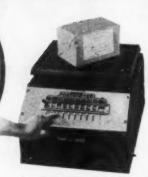
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DETECTO SCALES, INC. ONE MAIN STREET . BROOKLYN, N. Y. (Continued from page 426)

pansions carried out by the rubber industry during the war this would have been impossible," the rubber executive declared.

"Prewar capacity was 65,000,000 tires a year but the industry is now capable of producing more than 110,-000,000 civilian tires annually which will contribute importantly to a new high level of world rubber consumption that may reach 1,500,000 tons a year," Collyer said.

In discussing the outlook for synthetic and natural rubber now that the Far Eastern rubber producing areas will be restored to their rightful owner, the speaker said that the next rubber problem will be that of a world surplus of rubber.

"With out huge synthetic rubber capacity, a small foreign synthetic capacity and a tremendous world production of natural rubber, we could have 2,800,000 tons to supply the expected 1,500,000 ton annual demand.

#### Choice Between Natural and Synthetic

"Once natural rubber production has been restored America will have to choose between the natural and synthetic materials, a decision that involves important economic and political problems.

"Synthetic rubber can make a major contribution in limiting the extent to which prices for natural rubber increase. Today, however, synthetic rubber costs and prices are complicated by a problem of base material

"Approximately half our present total synthetic rubber capacity is based on alcohol butadiene and the balance on petroleum butadiene-a gas obtained either from grain alcohol or from petroleum.

(Continued on page 430)

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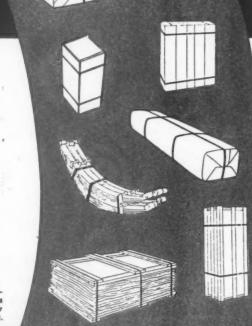
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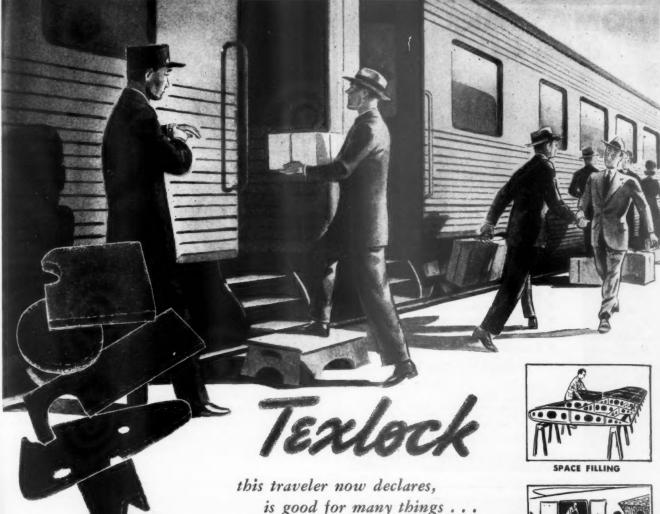


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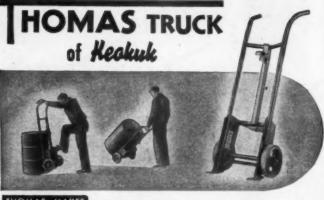
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(Continued from page 428)

"The cost of synthetic rubber from grain alcohol is above 40 cents a pound, while that produced from petroleum is about 14 cents a pound, exclusive of amortization and depreciation costs.

"As long as our total needs for synthetic rubber are substantially above 500,000 tons annually continued use of grain alcohol may keep the average cost of synthetic rubber as high as 30 cents a pound compared with a prewar condition in which natural rubber could be laid down in New York and sold at a fair margin of profit at 12 cents a pound.

"When rubber needs fall below 500,000 tons a year our total synthetic requirements can be based on petroleum butadiene, and synthetic rubber can then exercise its maximum restraining influence on natural rubber prices," Mr. Collyer declared.

Commenting on the competition between synthetic and natural rubbers Mr. Collyer said that discoveries may be made which will whittle down, or possibly even eliminate the quality advantage which natural rubber now holds for tire manufacture.

#### FIRE PROTECTION

RIGINAL drawings, micro-copies or master prints of products are some of the most valuable possessions of industrial firms. They must be safeguarded, for their destruction might well disrupt production and bring about serious loss in time and money. Well managed and foresighted firms, therefore, construct carefully planned vaults for the safe-keeping of records,

(Continued on page 432)



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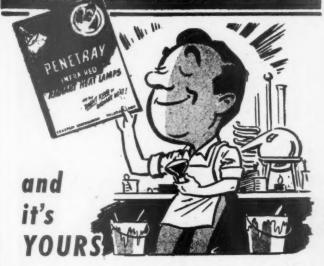
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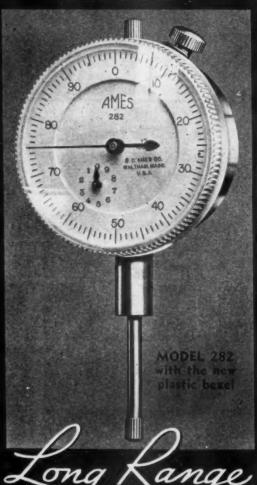


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(Continued from page 430)

drawings, and other valuable papers, especially against fire, where a special problem arises. Automatic water sprinkler systems are dependable guardians of property against fire, but obviously, their action leaves records and drawings so water-soaked and blurred that many times they might as well be burned. Fire-protection authorities therefore recommend an extinguishing medium which does not cause damage. . . . Carbon dioxide, which is completely dry, leaves no residue whatsoever, and damages nothing it contacts.

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"A system of automatic carbon dioxide fire protection installed in accordance with the National Fire Protection Association regulations affords excellent protection and is particularly adaptable where large values are concentrated in a relatively small space. The word "relatively" is significant here. The Federal Fire Council, after conducting exhaustive tests of the suitability of carbon dioxide fire protection for storage vaults in libraries, museums, etc., endorsed the method and added: "Extinguishment of fires in larger spaces can be regarded as presenting no added problem other than the larger amount of gas required." Their tests further indicated the notable fact that "the gas will penetrate closed metal shelving and ordinary metal filing cabinets and extinguish fires in their contents." This illustrates the three-dimensional action of carbon dioxide .-(Kidde Industry).

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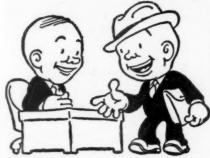


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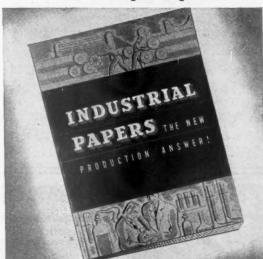
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#### THIS IS THE DAY

THE following statement was recently issued by the the Surplus Property Board:

This is the day for which the Surplus Property Board and the disposal agencies have been preparing. Sharing the joy and exultation in the great victory, we realize at the same time that tremendous responsibilities and duties are ours.

We face the task of using the vast amount of war surplus to create peacetime jobs, to speed peacetime production, to meet shortages, to help veterans, to benefit public health, education and transportation, and to get a fair return for the people.

The job is big. It is difficult. We do not pretend to know all the problems that confront us. The Surplus Property Board bespeaks the patience and the help of the public in achieving its objectives of selling surplus property for the best good of the whole nation. We have built a foundation which can support the massive superstructure.

#### Use Regular Trade Channels

The Army and Navy know which other Government agencies will receive and dispose of the goods no longer needed for war. The disposal agencies know the policies they are to follow in selling. There will be no network of government retail stores, but regular channels of trade will be used.

The States and local governments are receiving the priority to which the law entitles them, and provisions are being made to give them medical and educational surpluses at nominal costs on a basis of need. Veterans are being assisted to set themselves up in business. Farmers are being helped, especially where crop production is threatened.

Provision has been made to speed plant clearance and to put Government-owned machinery to work in reconversion without delay. The policy of favoring local capital—all other factors being equal—in the disposal of Government-owned factories had been adopted. Machinery for selling surplus property abroad has been established.

In this historic moment, the members of the Surplus Property Board wish to renew their pledge to the nation that these policies and these objectives will be pursued energetically.

> W. S. SYMINGTON, Chairman. EDWARD H. HELLER, Member. ROBERT A. HURLEY, Member.

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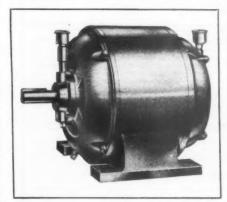
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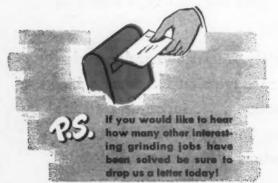


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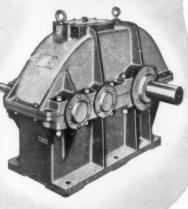
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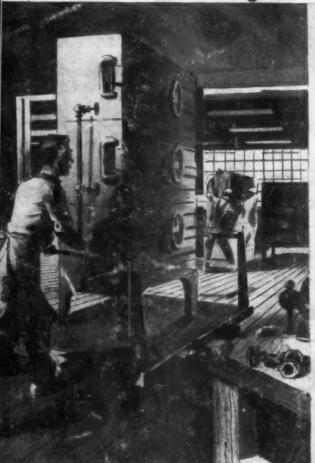






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